István ADORJÁN

SECRET

MY REPULSED PHYSICAL GENERAL THEORIES AND THEIR REPULSION

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– First Edition: published with Google Play and Internet Archive in October 2018, re-published in June 2019: GGKEY: 2BELBF740G3 (PDF without DRM).
– Personal Book Identifier: istvan%adorjan%20%december%1959%calugareni%mures%romania %repulsedphysical%1%pdf%googleplay.

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If humans emulate, they regularly produce one winner and a number of losers. I had a private emulation with physics, which resulted in no loser and two winners. This book is the prize for physics and myself.

István ADORJÁN

MY REPULSED PHYSICAL GENERAL THEORIES AND THEIR REPULSION

First Edition

ISTVÁN ADORJÁN – 2019

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Foreword

Unlike politics, in science laws are not made, but discovered. According to my “dialectical materialist”, but anti-communist philosophical conception, there is an objective existence outside of and independent on the human consciousness, which was not created by a divinity of religious belief, or a “Big Bang” of cosmological hypothesis, but has always existed and will always exist. Humans and natural laws are distinct parts of that existence, and humans depend on and were in a measure created by natural laws. The scientific mind strives to discover and know, as well as the technical and technological mind tends to use natural laws, because they are absolutely “compulsory”, they have always been and will always be “in force”. With this book, I present my attempts to discover general laws in physics, and the results I achieved in those physical theoretical proceedings.

Science is universal, its cultivation and acquisition develops human consciousness, unites nations, and drifts towards the formation of a universal nation on Terra. This must be the main reason why the national secret political organizations — experienced and hypothesized by me, as is partly reflected by this book as well — defending, cultivating and developing national consciousness have been hostile to science and its popularization. In my conception, one of the manifestations of this hostility is that the scientific potential of society has been wasted by allowing the accumulation of a huge amount of unpublished scientific works, and the national states appear to do nothing to put them in circulation. It would not take relatively much effort on the part of the national states to introduce and guarantee the right for scientific publication by founding paper journals, or at least running a server of electronic journals. They are running national radios and televisions, with which they can do their national secret political propaganda, but do nothing to collect the scientific achievements of the nation, and make them accessible for the nation. [Note: this respect, it would be significant a comparison between the budgets and assets of the Institute of Physics in London, asking the civil society for donations, and the Buckingham Palace.]

From a philosophical point of view, physics appears to be the most fundamental natural science, as it has a branch each for all levels of organization of the existence: astrophysics for the cosmos, mechanics for the macroscopic and celestial bodies, atomic physics for the components of the macroscopic bodies, and particle physics for the components of the atoms. This was the main reason why I thought after the creation in 1987 of my philosophical theory entitled “The Existence Principle of Relation” that i should have examined physics in its spirit to find out what it could bring out of it. The outcomes were my physical general theories mainly drafted in the articles entitled “Contributions to a General Theory of the Physical Systems”, “Classical Inductive General Law of the Fundamental Physical Interactions and Forces”, and “Classical Inductive General Law of Motion”. Within this incursion into physics, I happened to also create an electron model allowing a quantitative estimation of some properties of the photons and gravitons.

Therefore, my purpose was to generalize the laws of physics, find out their essential commonness, and hopefully to connect them with “The Existence Principle of Relation” by reducing them to it. For this, it was sufficient to mainly examine only mechanics and electromagnetics, but I looked into the particle and quantic physics as well, without however raising the resulting general theories to the quantic level. I carried out this examination roughly between 2004 and 2007.

For a means of protecting my theories and myself from the destructive plagiary-mock-trial state attacks of the national secret political organizations, every time I set up or significantly further developed a physical theory between January 2006 and March 2007 I put the respective text contents in the form of notarial statements, and signed them in front of a notary public in order to obtain evidences of the existence at that time of those contents, and my authorship relative to them. Therefore, these notarial

statements reflect relatively exactly not only the contents of my theories, but also the chronology of their development. I made my first statements in both the Hungarian and the English languages, then I restricted myself to the English language only. The photos of these notarial statements constitute the point 2.1. of this book.

Under point 2.2., I present all the article versions reflecting the respective development stages of my physical general theories. Some of the articles I submitted for publication to academic journals. The submission process had two phases, one postal phase between 2006 and 2007, and one internet phase between 2011 and 2012. I also include photos of all the copies of applications, postal checks, acknowledgements of receipt, answers, and envelopes I have as means of evidence. I inserted the articles in their original form, with minor formatting changes, but no content modifications. However, this insertion resulted in a few relatively insurmountable gaps.

I created these general theories from existent and generally accepted knowledge, by means of mathematics and logical inference, therefore there can be no reason for me to doubt their theoretical value. Additionally, I have a plentiful experience of loser in my inescapable emulations with the national secret political organizations. For these reasons, I cannot exclude the possibility that the decisions not to publish my articles are manifestations of the secret political persecutions relative to my person of the respective national secret political organizations, as I described them and their actions in other published books of mine. Besides, they have repulsion from general theories and laws, as they tend to rule everybody and everything, tend to become the single source of law, the “singularity” defying even natural laws.

September 2018.

1. History of repulsion

1.1 Paper submissions

Also based on previous scientific and philosophical knowledge, I set up the general theory of physical systems between 22 December 2005 and 6 January 2006.

In January 2006, I submitted the printed paper manuscript of the first version of the article entitled “Contributions to a General Theory of the Physical Systems”, presented under point 2.1.1., reflecting the first stage of development of that general theory, to the journal Physical Review Letters in New York, the United States of America. I have retained no evidence about the submission of that application.

At the beginning of February 2006, I received a repulsion letter from the Physical Review Letters. It is characteristic that it formally endows me with the title of “doctor”, which expresses the personal secret policy of the American national secret political organization, namely the Illuminati towards my person of having my works not published, and that I use them for getting that title:

PHYSICAL REVIEW LETTERS
1 Research Road, Box 9000
Ridge, New York 11961-9000

Editors:
JACK SANDWEISS
GEORGE BASBAS
STANLEY G. BROWN
REINHARDT B. SCHUHMANN
Associate Editors:
ROBERT GARISTO
BRANT M. JOHNSON
SAMINDRANATH MITRA

http://prl.aps.org/
prl@aps.org
(631) 591-4060
Fax: (631) 591-4141

Re: LN10608
Contributions to a general theory of the physical systems
by Istvan Adorjan

Dr. Istvan Adorjan

[redacted]

1 February 2006

Dear Dr. Adorjan,

Your manuscript has been considered. We regret to inform you that we have concluded that it is not suitable for publication in Physical Review Letters.

Yours sincerely,

Jerome Malenfant
Senior Assistant Editor
Physical Review Letters

R4L

On 9 February 2006, I posted an application for the publication of the first version of the same article to the journal Physics Letters A of Elsevier in Amsterdam, Holland:

- Copy -

To: ELSEVIER

From: Istvan Adorjan,

[redacted]

February , 2006.

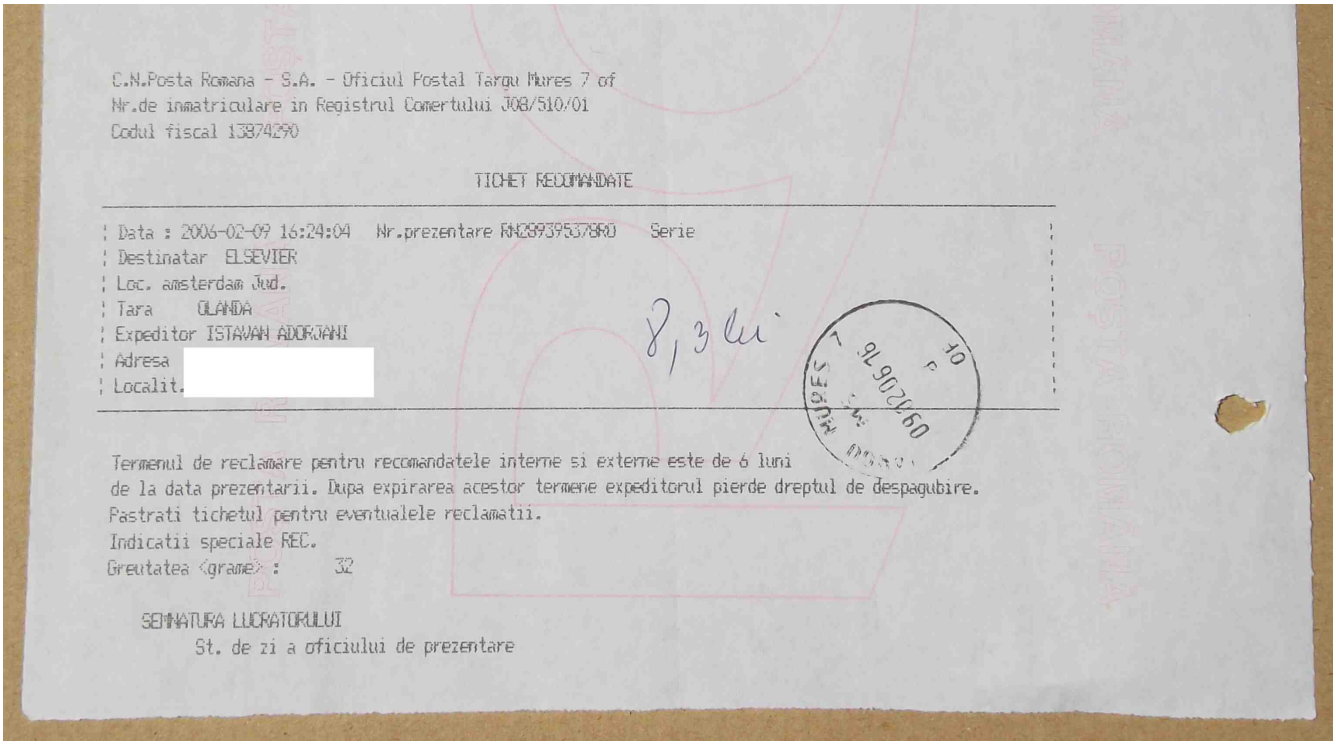
Dear Editor,

The undersigned Istvan Adorjan, I hereby kindly ask you to consider my paper, entitled Contributions to a general Theory of The Physical Systems, for publication at Elsevier, for example in Physics Letters A.

I mention that some changes may be made to wholly fit it to the needs of Elsevier (Physics Letters A), for example, astronomical consequences may be removed.

Thank you in advance.

Yours sincerely,
Adorján



C.N.Posta Romana - S.A. - Oficiul Postal Targu Mures 7 of
Nr.de inmatriculare in Registrul Comertului J08/510/01
Codul fiscal 13874290

TICHET RECOMANDATE

Data : 2006-02-09 16:24:04 Nr.prezentare RN289395378RO Serie
Destinatar ELSEVIER
Loc. amsterdam Jud.
Tara OLANDA
Expeditor ISTAVAN ADORJANI
Adresa
Localit.

8,3 lei

Termenul de reclamare pentru recomandatele interne si externe este de 6 luni de la data prezentarii. Dupa expirarea acestor termene expeditorul pierde dreptul de despagubire.
Pastrati tichetul pentru eventualele reclamatii.
Indicatii speciale REC.
Greutatea <grame> : 32

SEMNATURA LUCRATORULUI
St. de zi a oficiului de prezentare

Without having received a repulsion letter from Elsevier, on 12 April 2006, I wrote an application for the publication of the second version of my article entitled “Contributions to a General Theory of the Physical Systems”, presented under point 2.1.2., to the journal Reviews of Modern Physics:

To: REVIEWS OF MODERN PHYSICS

From: Adorján István

[redacted]

April 12, 2006.

Dear Editor,

The undersigned István Adorján, author, I hereby send you my paper entitled Contributions to a General Theory of Physical Systems, with the request to publish it in Reviews of Modern Physics, it being more than a particular branch of physics, general physics, an attempt to unify physical sciences, but less than philosophy of science.

Yours sincerely,

Adorján

Towards the end of April 2006, I received a repulsion letter not from Reviews of Modern Physics, but from the Physical Review Letters:

PHYSICAL REVIEW LETTERS
1 Research Road, Box 9000
Ridge, New York 11961-9000

Editors:
JACK SANDWEISS
GEORGE BASBAS
STANLEY G. BROWN
REINHARDT B. SCHUHMANN
Associate Editors:
ROBERT GARISTO
BRANT M. JOHNSON
SAMINDRANATH MITRA

http://prl.aps.org/
prl@aps.org
(631) 591-4060
Fax: (631) 591-4141

Re: LN10608L
Contributions to a general theory of the physical systems
by Istvan Adorjan

Dr. Istvan Adorjan

[redacted]

21 April 2006

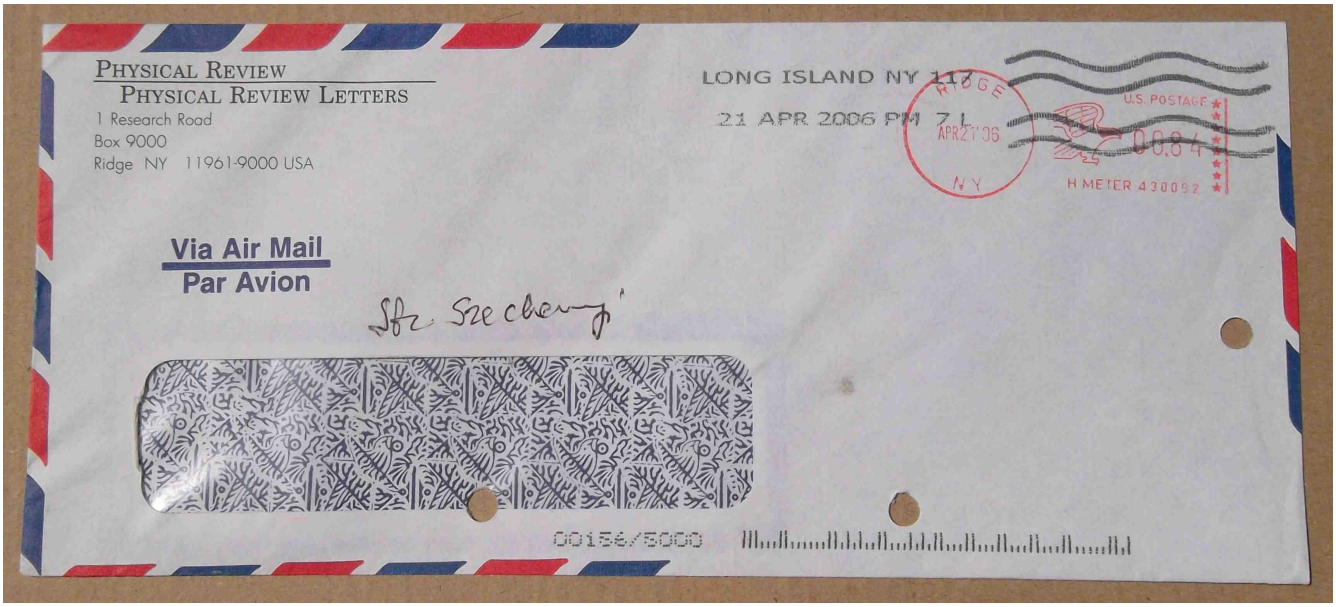
Dear Dr. Adorjan,

You have recently submitted a slightly modified version of the above manuscript for consideration by Reviews of Modern Physics. Your manuscript, however, has none of the necessary characteristics of a scientific article, and so is inappropriate for publication in any journal of the American Physical Society, including Reviews of Modern Physics. Thus no useful purpose would be served by a transfer there, or indeed by further consideration by any of the APS journals.

Yours sincerely,

Reinhardt B. Schuhmann

Reinhardt B. Schuhmann
Editor
Physical Review Letters



My article may not “serve any useful purpose”, but there is theoretical physics, there are theorists in physics, and regularly they do not raise the problem of usefulness when judging a theory, to accept it truthfulness is sufficient.

On 22 May 2006, I wrote an application for the publication of the second version of the above article to the journal Physics Letters A:

To: Physics Letters A

Object: Application for consideration

From: [redacted]

May 22, 2006.

Dear Editor,

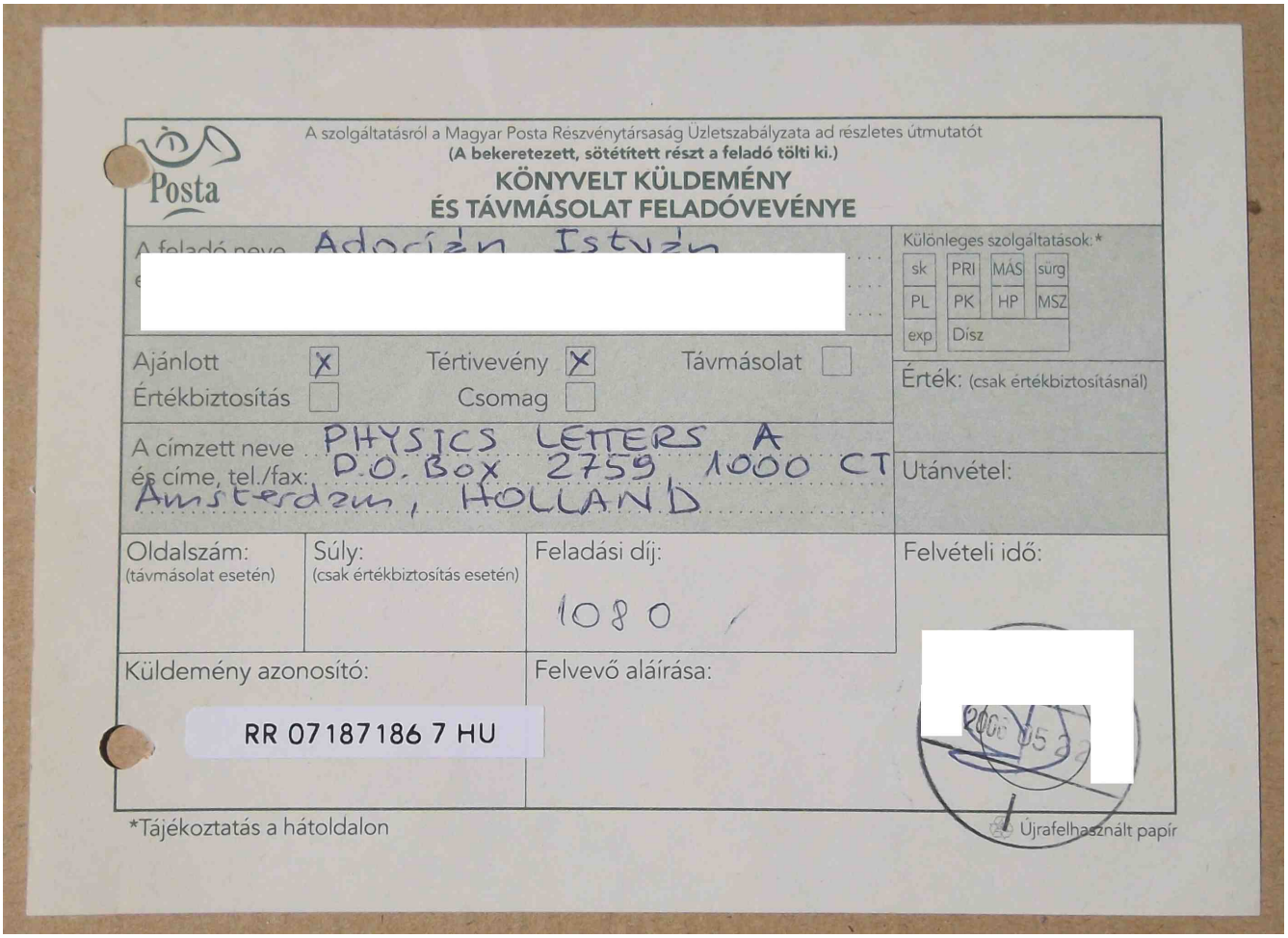
The undersigned István Adorján, author of a general theory of the physical systems,

I hereby offer my manuscript entitled Contributions to a general theory of the physical systems to be considered at Physics Letters A.

Thank you in advance.

Yours sincerely,

István Adorján



A szolgáltatásról a Magyar Posta Részvénytársaság Üzletszabályzata ad részletes útmutatót
(A bekeretezett, sötétített részt a feladó tölti ki.)

Posta

KÖNYVELT KÜLDEMÉNY ÉS TÁVMÁSOLAT FELADÓVEVÉNYE

A feladó neve: Adorján István
[redacted]

Különleges szolgáltatások:*
sk | PRI | MÁS | sürg
PL | PK | HP | MSZ
exp | Dísz

Ajánlott [X] Tértivevény [X] Távmásolat [ ]
Értékbiztosítás [ ] Csomag [ ]

Érték: (csak értékbiztosításnál)

A címzett neve és címe, tel./fax: PHYSICS LETTERS A
P.O. Box 2759, 1000 CT
Amsterdam, HOLLAND

Utánvétel:

Oldalszám: (távmásolat esetén)	Súly: (csak értékbiztosítás esetén)	Feladási díj:	Felvételi idő:
		1080	

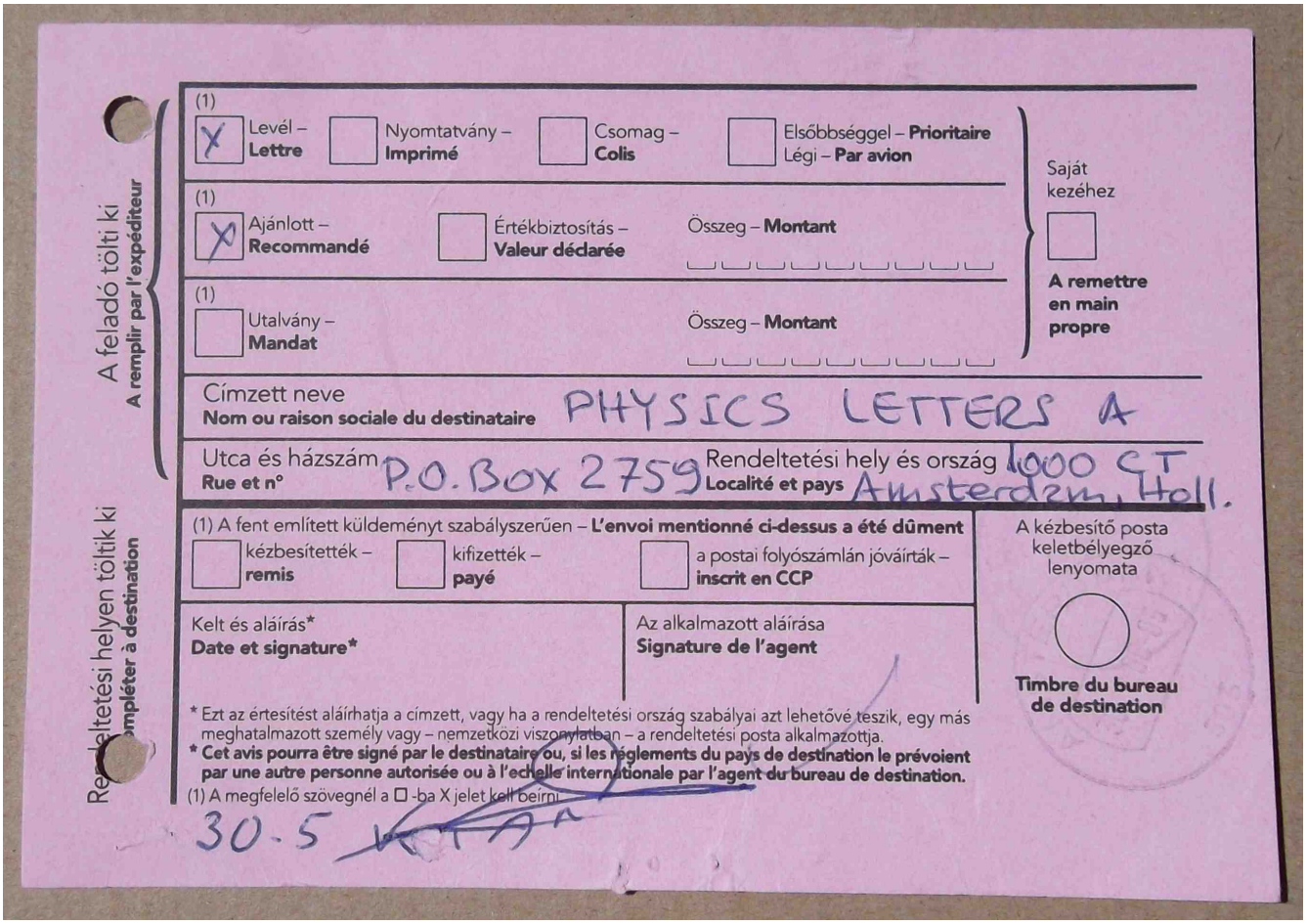
Küldemény azonosító: RR 07187186 7 HU

Felvevő aláírása:

[redacted]

*Tájékoztatás a hátoldalon

Újrafelhasznált papír



Between 14 June and 7 July 2006, I succeeded in unifying the gravitational and the electric interactions. On 18 July 2006, I posted the article entitled “A Unification of the Radial Static Electric and Gravitational Forces”, presented under point 2.2.1., reflecting the first stage of development of my general theory of the physical interactions, to the journal Physics Letters A:

To: Physics Letters A

Object: Application for consideration for publication

From: István Adorján, Hungary.

July 18, 2006.

Dear Editorial Board,

The undersigned István Adorján, I hereby submit the printed form of the manuscript of my physical theory entitled A unification of the radial static electric and gravitational forces in three copies to be considered for publication in Physics Letters A.

At the same time I express my willingness to perform certain changes in form and content.

Yours sincerely,
Adorján

Posta

A szolgáltatásról a Magyar Posta Részvénytársaság Üzletszabályzata ad részletes útmutatót
(A bekeretezett, sötétített részt a feladó tölti ki.)

KÖNYVELT KÜLDEMÉNY
ÉS TÁVMÁSOLAT FELADÓVEVÉNYE

A feladó neve Adorján István
és [redacted]

Különleges szolgáltatások:*
sk | PRI | MÁS | sürg
PL | PK | HP | MSZ
exp | Dísz

Ajánlott [X] Tértivevény [X] Távmásolat [ ]
Értékbiztosítás [ ] Csomag [ ]

Érték: (csak értékbiztosításnál)

A címzett neve PHYSICS LETTERS A
és címe, tel./fax: P.O.B. 2759
1000 CT AMSTERDAM, HOLLAND

Utánvétel:

Oldalszám: (távmásolat esetén)
Súly: (csak értékbiztosítás esetén)
Feladási díj: 1200
Felvételi idő: 2006 07 18 H

Küldemény azonosító: RR 09651803 2 HU
Felvevő aláírása:

*Tájékoztatás a hátoldalon
Újrafelhasznált papír

Between 18 July and 14 August 2006, I succeeded in including in the unification proceedings the magnetic interaction as well, which resulted in the article entitled “Classical Inductive General Law of the Fundamental Physical Interactions and Forces”, presented under point 2.2.2. On 16 August 2006, I wrote an application for its publication to the journal Physical Review:

To: PHYSICAL REVIEW

Object: Application for consideration

From: ISTVÁN ADORJÁN, Hungary.

August 16, 2006.

Dear Editorial Board,

The undersigned István Adorjan, author, I hereby submit the manuscript entitled A Classical Inductive General Law of the Fundamental Physical Interactions and Forces to be considered for publication in Physical Review.

Thank you for your attention and for the opportunity.

Yours sincerely.

Adorján

In September 2006, I received a repulsion letter from the Physical Review D:

PHYSICAL REVIEW D

1 Research Road, Box 9000
Ridge, New York 11961-9000

http://prd.aps.org/
prd@aps.org
(631) 591-4040
Fax: (631) 591-4141

Editors:
ERICK J. WEINBERG
D. NORDSTROM
Associate Editors:
JONATHAN A. BAGGER
ROBERT D. PISARSKI

Re: DV10182
Classical inductive general law of the fundamental physical interactions and forces
by Istvan Adorjan

Dr. Istvan Adorjan

[redacted]

28 August 2006

Dear Dr. Adorjan,

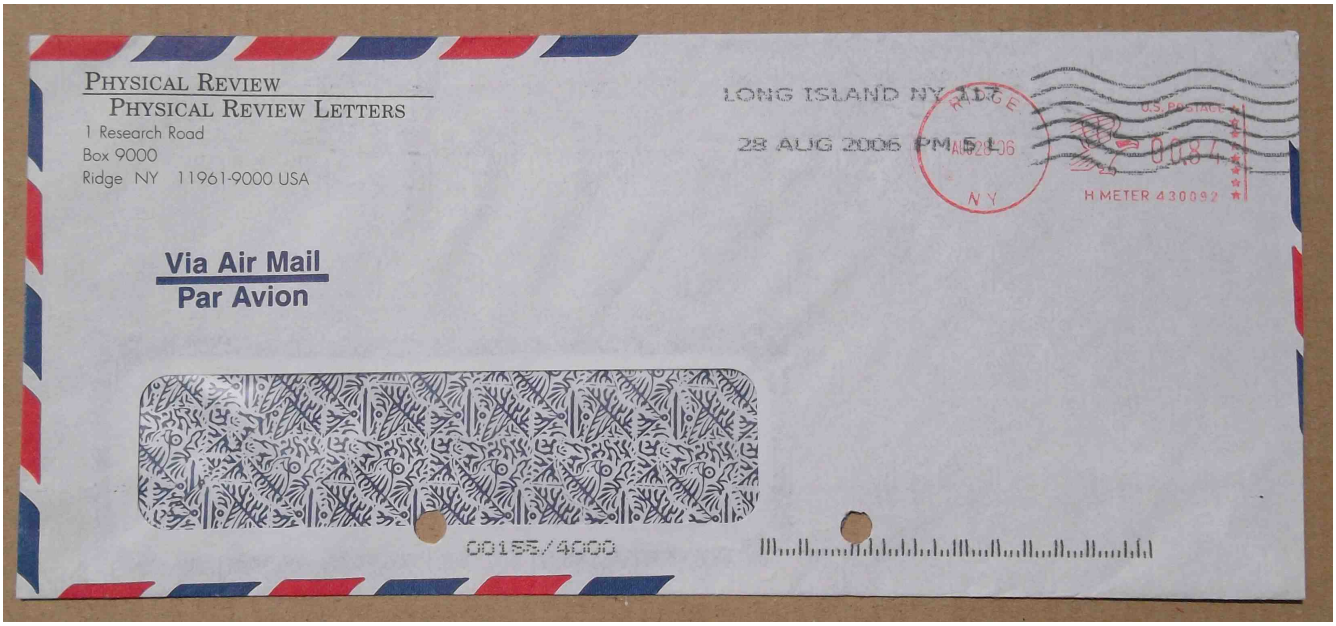
I am writing in reference to your manuscript "Classical inductive general law of the fundamental physical interactions and forces" (DV10182).

Papers proposing speculative alternatives to or reformulations of currently accepted theories must meet a set of stringent requirements for publication in Physical Review D. There must be a clear and convincing discussion of the motivation for new speculations, with adequate reasons for introducing new concepts. In addition, plausible arguments should be set forth that the predictions and interpretations are experimentally distinguishable from existing knowledge. If the new formulation results in contradictions with the accepted theory, then there must be both a discussion of what experiments could be done to show that the conventional theory needs improvement, and an analysis showing that the new theory is consistent with all existing experiments. Finally, the discussion must be firmly grounded in our current knowledge of the subject and must be formulated at a level of technical sophistication appropriate to the current state of research in the field.

Upon reading your manuscript, I find that your paper does not satisfy these requirements. I regret to inform you that it is therefore not suitable for publication in Physical Review D.

Yours sincerely,

Erick J. Weinberg
Editor
Physical Review D



Therefore, while there have been decades of efforts of numerous physicists to unify the fundamental physical interactions, I was required to provide “a clear and convincing discussion of the motivation for new speculations”.

I consider it significant that all the three concrete persons undersigning the above repulsion letters — namely, Jerome Malenfant, Reinhardt Schuhmann, and Erick Weinberg — appear by name to be of non-English ethnicity, which corroborates my presumption relative to the Illuminati origination of the non-publication of my works, with that by virtue of its English ethnical basis defending and promoting the English ethnicity it has the public “dirty jobs” done with persons of non-English ethnical origin.

I still posted the above article, reflecting the second stage of development of my general theory of the physical interactions, to the journals Contemporary Physics on 1 September 2006, and Scientific American on 27 September 2006, but it appears that the repulsion decision of the Physical Review D was final and expressed the position of all the journals:

To: Contemporary Physics

Object: Application for consideration

From: ISTVÁN ADORJÁN, Hungary.

[redacted]

August 31, 2006.

Dear Editorial Board,

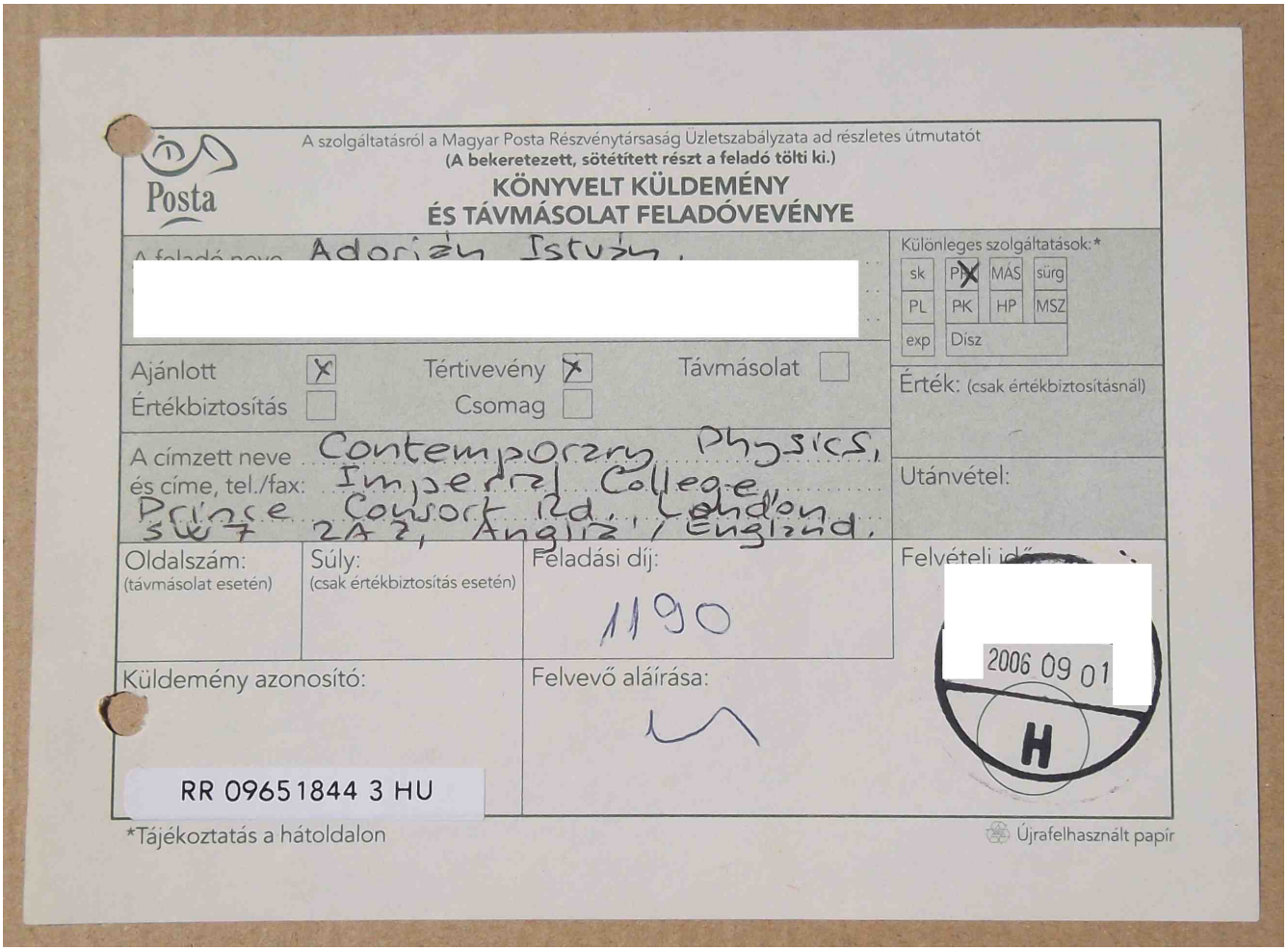
The undersigned István Adorján, author, I hereby submit the manuscript entitled Classical inductive general law of the fundamental physical interactions and forces to be considered for publication in Contemporary Physics.

The manuscript is not being under consideration at any editorial office.

Thank you for your attention and for the opportunity.

Yours sincerely,

Adorján



Posta

A szolgáltatásról a Magyar Posta Részvénytársaság Üzletszabályzata ad részletes útmutatót
(A bekeretezett, sötétített részt a feladó tölti ki.)

KÖNYVELT KÜLDEMÉNY ÉS TÁVMÁSOLAT FELADÓVEVÉNYE

A feladó neve: Adorján István
[redacted]

Különleges szolgáltatások:*
sk | PV X | MÁS | sürg
PL | PK | HP | MSZ
exp | Dísz

Ajánlott X Tértivevény X Távmásolat ☐
Értékbiztosítás ☐ Csomag ☐

Érték: (csak értékbiztosításnál)

A címzett neve és címe, tel./fax: Contemporary Physics, Imperial College Prince Consort Rd., London SW7 2AZ, Anglia / England.

Utánvétel:

Oldalszám: (távmásolat esetén)	Súly: (csak értékbiztosítás esetén)	Feladási díj:	Felvételi idő:
		1190	[redacted] 2006 09 01 H

Küldemény azonosító: RR 09651844 3 HU

Felvevő aláírása:

*Tájékoztatás a hátoldalon

Újrafelhasznált papír

To: Scientific American
Object: Application for Consideration
From: ISTVÁN ADORJÁN, Hungary,

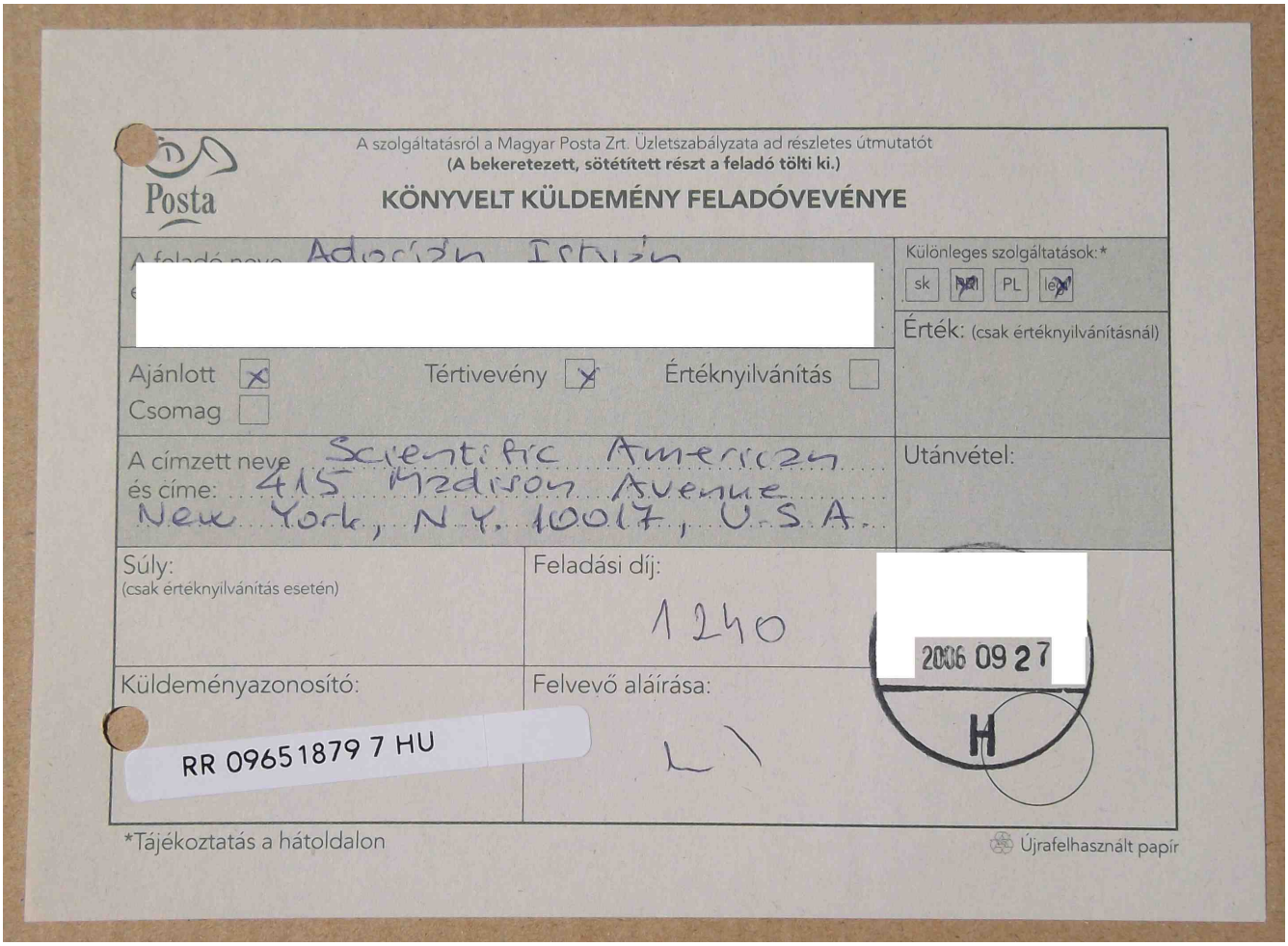
September 26, 2006.

Dear Editorial Board,

The undersigned István Adorján, author of the manuscript entitled Classical inductive general law of the fundamental physical interactions and forces, I hereby submit it with the request of its being considered for publication in Scientific American.

Thank you for your attention and for the opportunity.

Yours sincerely,
Adorján



A szolgáltatásról a Magyar Posta Zrt. Üzletszabályzata ad részletes útmutatót
(A bekeretezett, sötétített részt a feladó tölti ki.)

Posta

KÖNYVELT KÜLDEMÉNY FELADÓVEVÉNYE

A feladó neve Adorján István

Különleges szolgáltatások:* sk PL

Érték: (csak értéknyilvánításnál)

Ajánlott ☒ Tértivevény ☒ Értéknyilvánítás ☐
Csomag ☐

A címzett neve és címe: Scientific American 415 Madison Avenue New York, N.Y. 10017, U.S.A.

Utánvétel:

Súly: (csak értéknyilvánítás esetén)

Feladási díj: 1240

2006 09 27

H

Küldeményazonosító: RR 09651879 7 HU

Felvevő aláírása:

*Tájékoztatás a hátoldalon

Újrafelhasznált papír

On 27 September 2006, I also submitted the printed paper manuscript of the article entitled “Electron Model, Method and Formula for Calculating the Radii of the Photons”, presented under point 2.4.1., to the journal Reviews of Modern Physics in New York:

To: Reviews of Modern Physics
Object: Application for Consideration
From: ISTVÁN ADORJÁN, Hungary.

[redacted]

September 26, 2006.

Dear Editorial Board,

The undersigned István Adorján, author of the manuscript entitled Electron model, method and formula for calculating the radii of the photons, I hereby submit it with the request of its being considered for publication in Reviews of Modern Physics.

Thank you for your attention and for the opportunity.

Yours sincerely,

Adorján

A szolgáltatásról a Magyar Posta Zrt. Üzletszabályzata ad részletes útmutatót
(A bekeretezett, sötétített részt a feladó tölti ki.)

Posta

KÖNYVELT KÜLDEMÉNY FELADÓVEVÉNYE

A feladó neve Adorján István

Különleges szolgáltatások:* sk PR PL léx

Érték: (csak értéknyilvánításnál)

Ajánlott ☒ Tértivevény ☒ Értéknyilvánítás ☐
Csomag ☐

A címzett neve és címe: Reviews of Modern Phys. One Research Road, Ridge, N.Y. 11961-9000, U.S.A.

Utánvétel:

Súly: (csak értéknyilvánítás esetén)

Feladási díj: ~~950~~ 1170

2006 09 27

H

Küldeményazonosító: RR 09651878 3 HU

Felvevő aláírása:

*Tájékoztatás a hátoldalon

Újrafelhasznált papír

Unlike the general theories, the electron model operates only with known concepts, it can at least be considered a prolific toy of physical constants — as physicists wont to play with the physical constants — of which outcomes are consistent with the existent experience and knowledge, and yet it was neglected as well. On 30 October 2006, I still posted its article to the journal Nature in London, the United Kingdom of Great Britain and Northern Ireland, but on 4 November 2006 the “Royal Mail was unable to deliver this item because addressee has gone away”:

To: Nature

Object: Application for consideration

From: ISTVÁN ADORJÁN [redacted]

October 30, 2006.

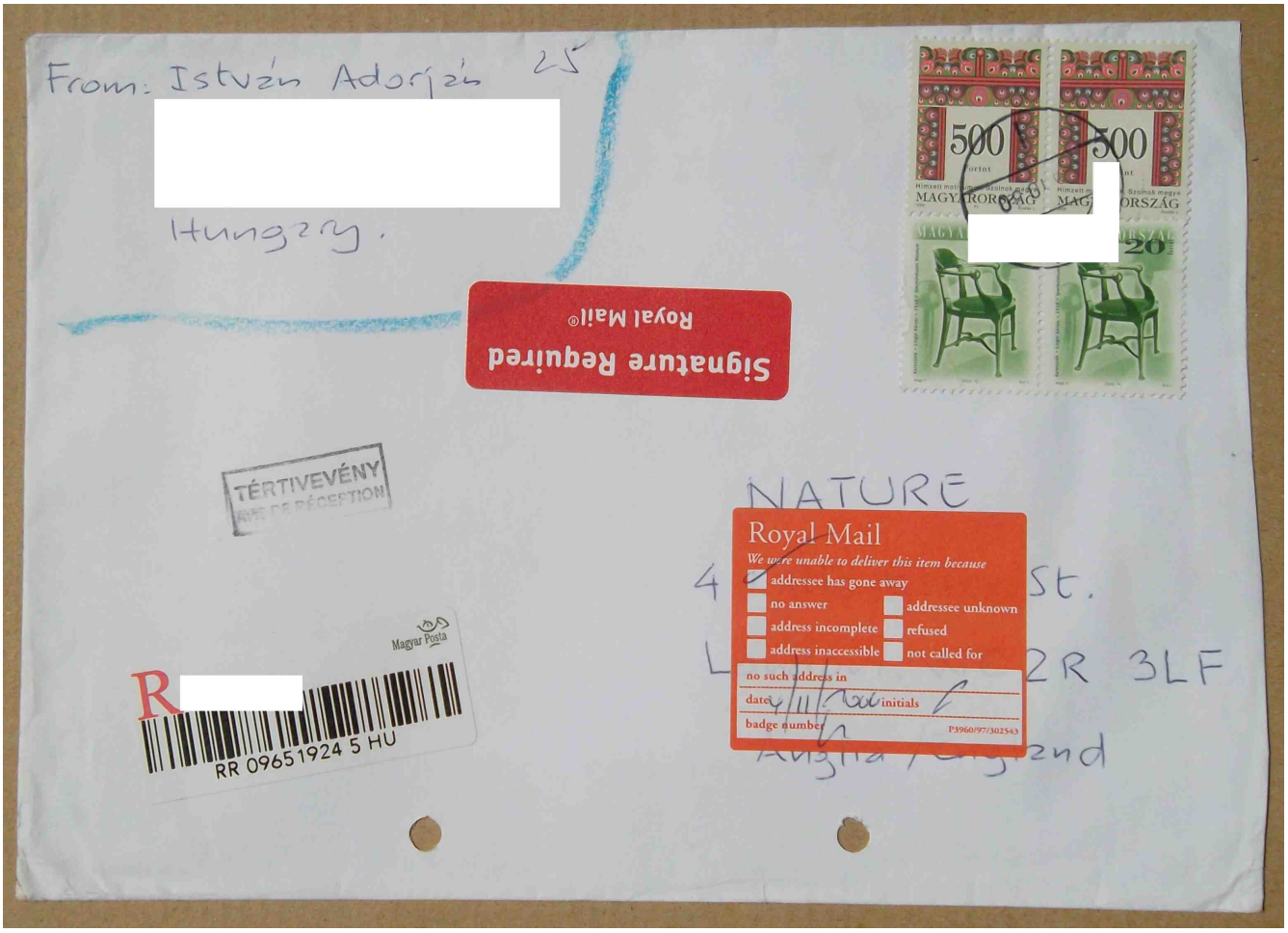
Dear Editorial Board,

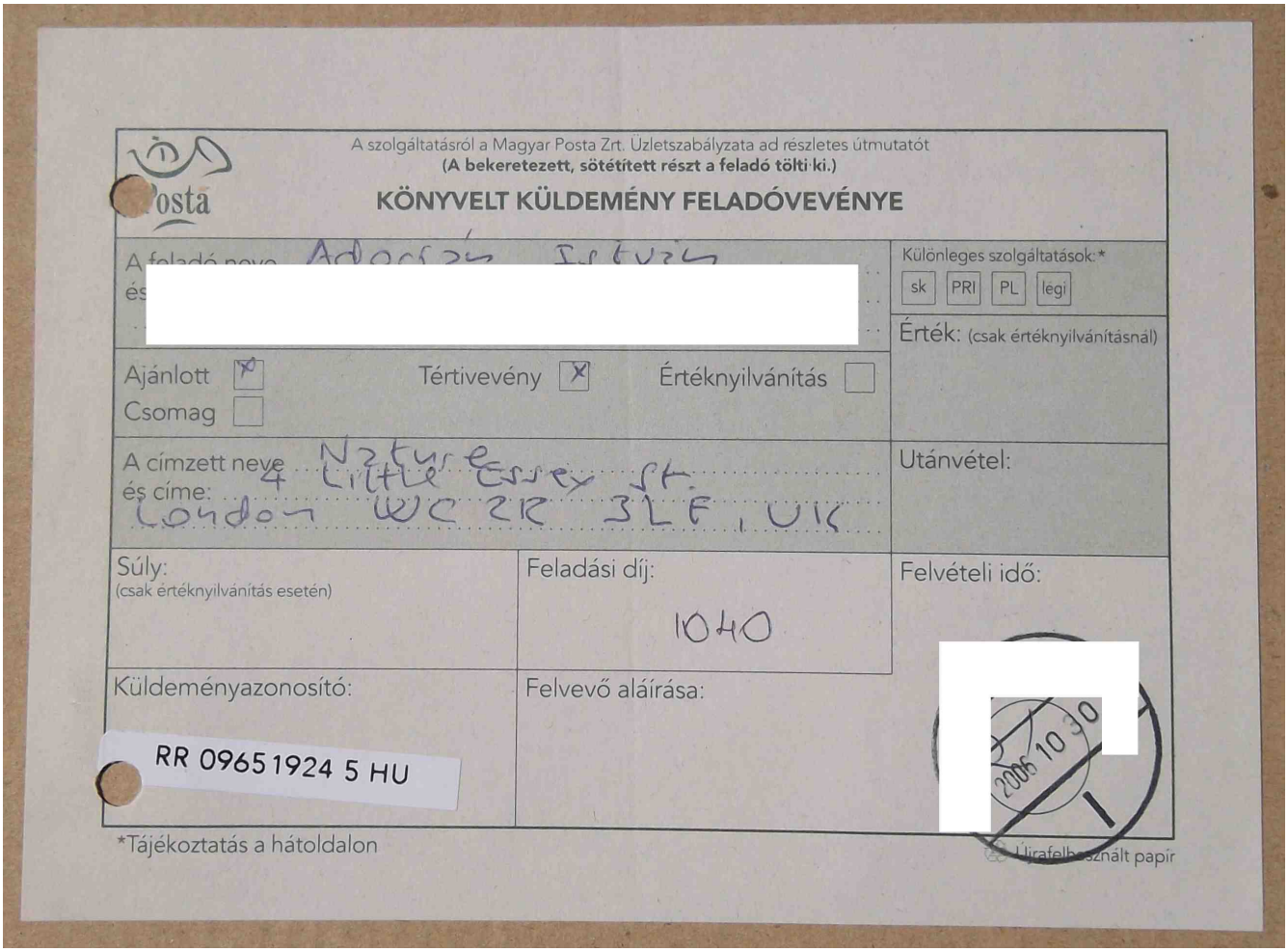
The undersigned István Adorján, author of the paper entitled Electron model, method and formula for calculating the radii of the photons, I hereby submit it to be considered for publication in Nature.

Thank you for your attention and for the opportunity.

Yours sincerely,

Adorján


From: István Adorján
Hungary.
Signature Required
Royal Mail®
TÉRTIVEVÉNY
AVIS DE RÉCEPTION
Magyar Posta
RR 09651924 5 HU
NATURE
Royal Mail
We were unable to deliver this item because
addressee has gone away
no answer
addressee unknown
address incomplete
refused
address inaccessible
not called for
no such address in
date
initials
badge number
P3960/97/302543



While I was besieging the journals, namely emulating with the national secret political organizations for the publication of my physical articles, in February 2007 [1x] it became widely known a new person of the American political life relative to the campaign for the presidential elections in 2008: Mitt Romney. From my point of view, his person has a double national secret political significance: first, his name comprises a potential message to me of the Illuminati: [Mitt Romney ⟶ mitt + Rom + ney ⟶ myth+ Romania + n-ai (Romanian) = myth+ Romania + you don't have, namely decoded: "If you cannot demonstrate that your physical theories are true, you won't get a position in physics, and will have to return to Romania."; second, as a former Mormon missionary and leader [1x] he can express and symbolize the American national secret political repulsion towards my general theories.

On 21 April 2007, I wrote an application for the publication of the third version of the article entitled "Contributions to a General Theory of the Physical Systems", presented under point 2.1.3., to the Physical Review Letters:

To: Physical Review Letters

Object: Application for consideration

From: ISTVÁN ADORJÁN, Hungary,

April 21, 2007

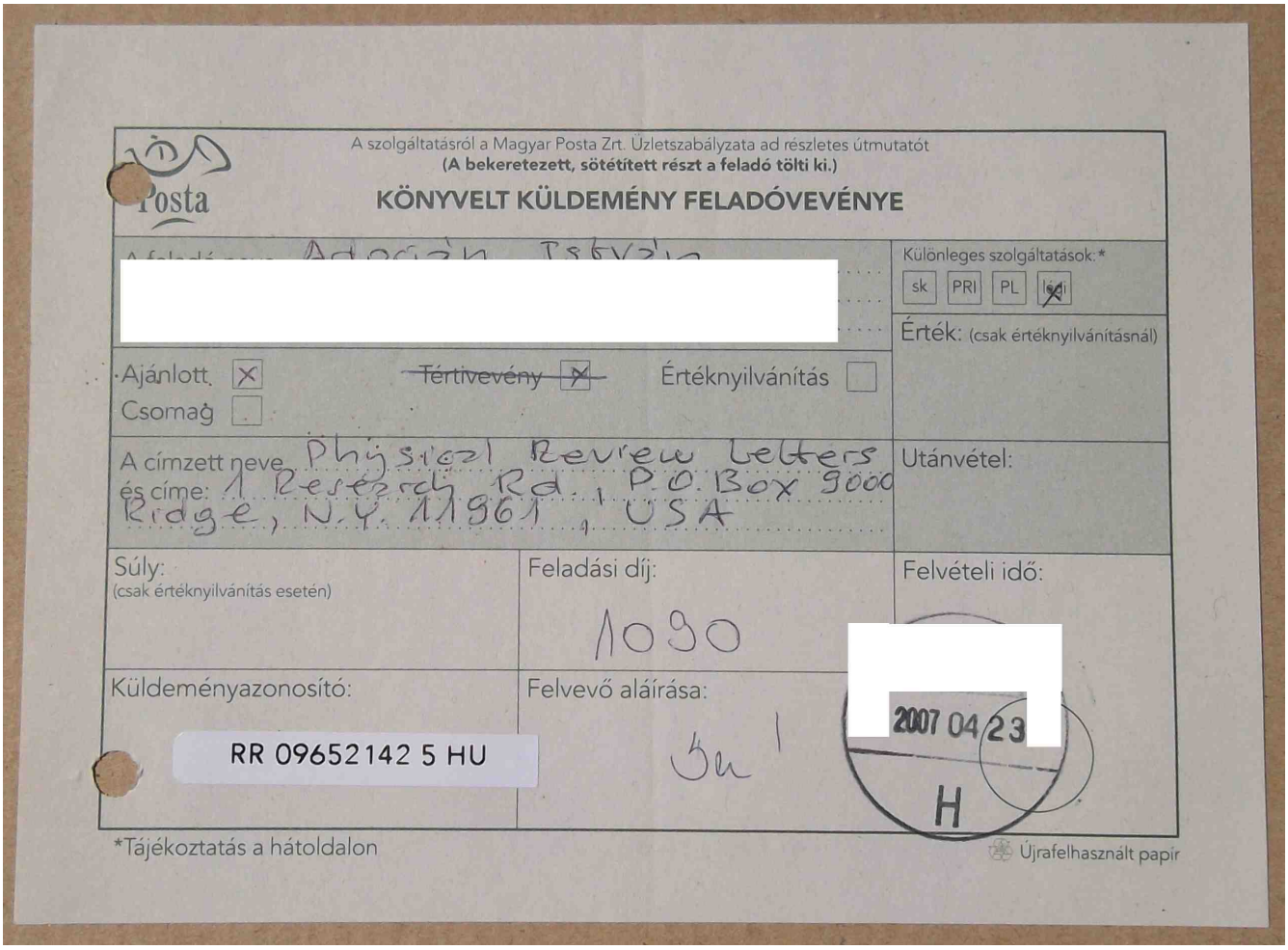
Dear Editorial Board,

The undersigned István Adorján, I hereby submit a copy of my paper entitled Contributions to a general theory of the physical systems, with the request of its being published in Physical Review Letters.

It is to be mentioned that a former variant of the above paper was considered at Physical Review Letters at number LN 10608.

Yours sincerely,

Adorján



Posta

A szolgáltatásról a Magyar Posta Zrt. Üzletszabályzata ad részletes útmutatót
(A bekeretezett, sötétített részt a feladó tölti ki.)

KÖNYVELT KÜLDEMÉNY FELADÓVEVÉNYE

A feladó neve: Adorján István

Különleges szolgáltatások:* sk PRI PL légi ☒

Érték: (csak értéknyilvánításnál)

Ajánlott ☒ ~~Tértivevény~~ ☒ Értéknyilvánítás ☐
Csomag ☐

A címzett neve és címe: Physical Review Letters 1 Research Rd., P.O. Box 9000 Ridge, N.Y. 11961, USA

Utánvétel:

Súly: (csak értéknyilvánítás esetén)

Feladási díj: 1090

Felvételi idő: 2007 04 23 H

Küldeményazonosító: RR 09652142 5 HU

Felvevő aláírása: Ju!

*Tájékoztatás a hátoldalon

Újrafelhasznált papír

Then, on 29 May 2007, I still posted the above version of the first article to the Scientific American:

To: Scientific American

Object: Application for consideration

From: István Adorján, Hungary,

[redacted]

May 28, 2007.

Dear Editorial Board,

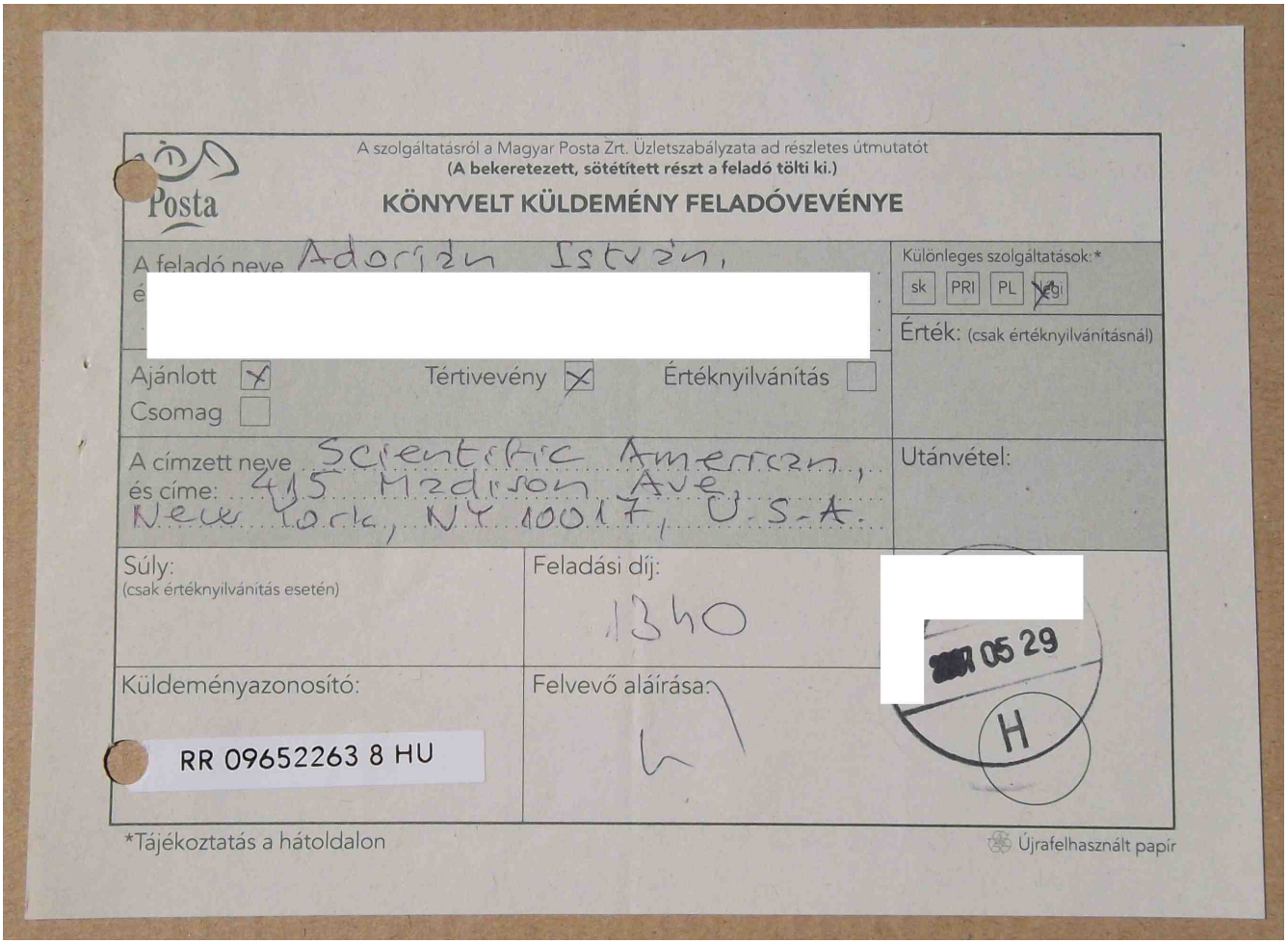
The undersigned István Adorján, author of the paper entitled Contributions to a general theory of the physical systems,

I hereby submit a copy of the above paper with the request of its being considered for publication in Scientific American.

Thank you in advance.

Yours sincerely,

Adorján



A szolgáltatásról a Magyar Posta Zrt. Üzletszabályzata ad részletes útmutatót
(A bekeretezett, sötétített részt a feladó tölti ki.)

Posta

KÖNYVELT KÜLDEMÉNY FELADÓVEVÉNYE

A feladó neve Adorján István,
é [redacted]

Különleges szolgáltatások:* sk | PRI | PL | Végi

Érték: (csak értéknyilvánításnál)

Ajánlott [X] Tértivevény [X] Értéknyilvánítás [ ]
Csomag [ ]

A címzett neve Scientific American,
és címe: 415 Mzdison Ave
New York, NY 10017, U.S.A.

Utánvétel:

Súly:
(csak értéknyilvánítás esetén)

Feladási díj:
1340

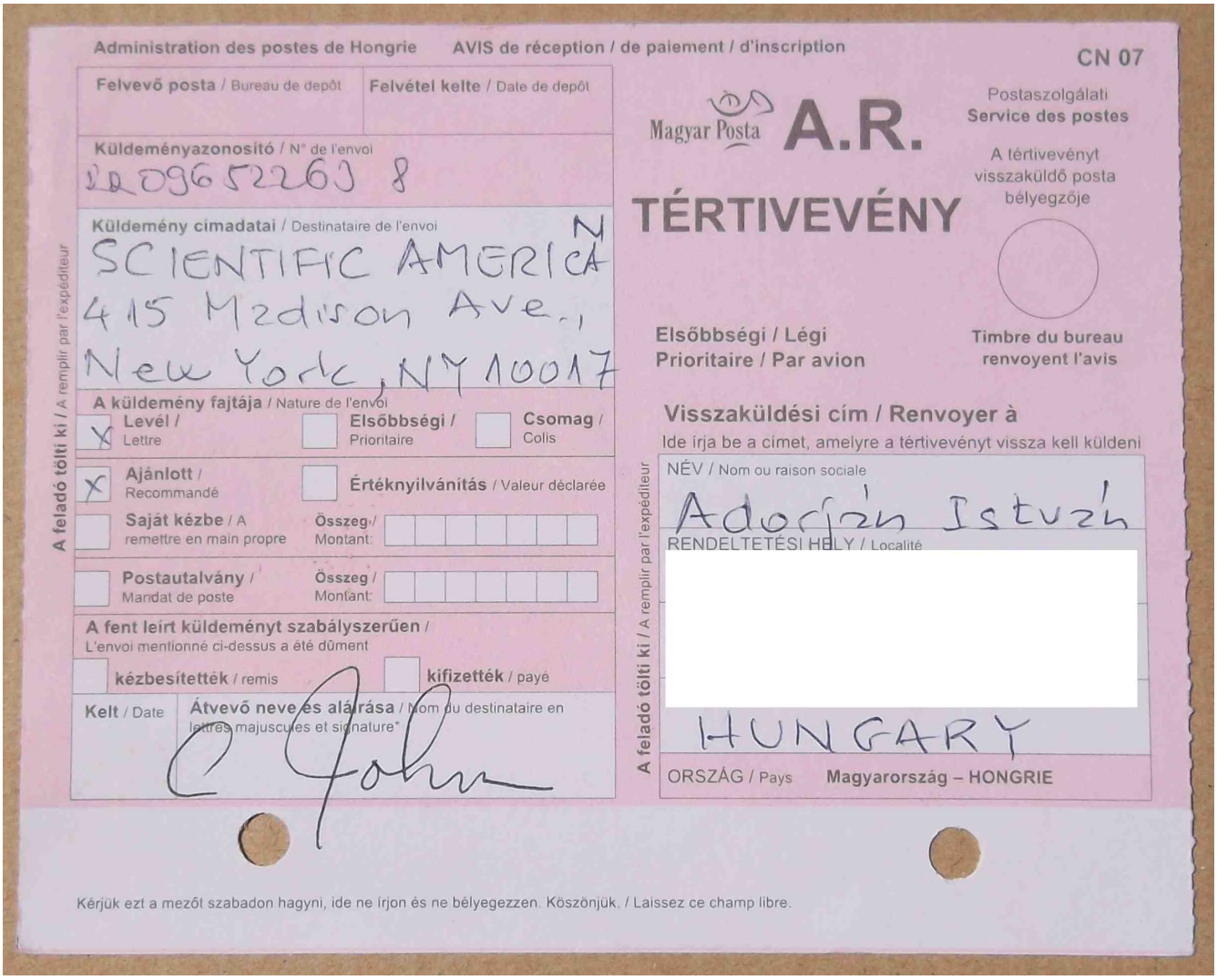
[redacted] 05 29
H

Küldeményazonosító:
RR 09652263 8 HU

Felvevő aláírása:

*Tájékoztatás a hátoldalon

Újrafelhasznált papír


Administration des postes de Hongrie AVIS de réception / de paiement / d'inscription

CN 07

Magyar Posta A.R.

TÉRTIVEVÉNY

Postaszolgálati Service des postes

A tértivevényt visszaküldő posta bélyegzője

Felvevő posta / Bureau de depôt

Felvétel kelte / Date de depôt

Küldeményazonosító / N° de l'envoi

LR096522603 8

Küldemény címadatai / Destinataire de l'envoi

SCIENTIFIC AMERICA N
415 Madison Ave.,
New York, NY 10017

A küldemény fajtája / Nature de l'envoi

X Levél / Lettre

Elsőbbségi / Prioritaire

Csomag / Colis

X Ajánlott / Recommandé

Értéknyilvánítás / Valeur déclarée

Saját kézbe / A remettre en main propre

Összeg / Montant:

Postautalvány / Mandat de poste

Összeg / Montant:

A fent leírt küldeményt szabályszerűen / L'envoi mentionné ci-dessus a été dûment

kézbesítették / remis

kifizették / payé

Kelt / Date

Átvevő neve és aláírása / Nom du destinataire en lettres majuscules et signature*

C John

Elsőbbségi / Légi Prioritaire / Par avion

Timbre du bureau renvoyent l'avis

Visszaküldési cím / Renvoyer à

Ide írja be a címet, amelyre a tértivevényt vissza kell küldeni

NÉV / Nom ou raison sociale

Adorján István

RENDELTETÉSI HELY / Localité

HUNGARY

ORSZÁG / Pays Magyarország – HONGRIE

A feladó tölti ki / A remplir par l'expéditeur

Kérjük ezt a mezőt szabadon hagyni, ide ne írjon és ne bélyegezzen. Köszönjük. / Laissez ce champ libre.

On 13 July 2007, I submitted the printed paper manuscript of the article entitled “Classical General Laws of the Field-Mediated Interactions and Forces”, presented under point 2.2.3., reflecting the third stage of development of my general theory of the physical interactions, to the journal Science International in Cambridge, the United Kingdom. The outcome was the same as that of relative to the Nature, only the reason differed: “we are only able to accept manuscripts submitted via our website and not those submitted in hard copy”:

To: Science International
Object: Application for consideration
From: ISTVÁN ADORJÁN, Hungary.

July 12, 2007.

Dear Editorial Board,

The undersigned István Adorján, author of the paper entitled CLASSICAL GENERAL LAWS OF THE FIELD-MEDIATED INTERACTIONS AND FORCES,

I hereby submit a copy of the above paper with the request of its being considered for publication in Science International.

Yours sincerely,

Adorján

A szolgáltatásról a Magyar Posta Zrt. Üzletszabályzata ad részletes útmutatót
(A bekeretezett, sötétített részt a feladó tölti ki.)

Posta

KÖNYVELT KÜLDEMÉNY FELADÓVEVÉNYE

A feladó neve és címe: [redacted]

Különleges szolgáltatások:*
sk | PRI | PL | légi

Érték: (csak értéknyilvánításnál)

Ajánlott [X] Tértivevény [X] Értéknyilvánítás [ ]
Csomag [ ]

A címzett neve és címe: Science International Batemen House, B2-88 Hills Rd., Cambridge, England

Utánvétel:

Súly: (csak értéknyilvánítás esetén)

Feladási díj: 1310

Fe[redacted]

2007 07 13. H

Küldeményazonosító: RR 11502977 1 HU

Felvevő aláírása:

*Tájékoztatás a hátoldalon

Újrafelhasznált papír

Science
www.sciencemag.org

18 July 2007

Dr István Adorján
2730 Albertirsa
Arany Köz 9
Hungary

Dear Dr Adorján,

Thank you for submitting your manuscript, "Classical General Laws of the Field-Mediated Interactions and Forces", to Science.

Unfortunately, we are only able to accept manuscripts submitted via our website and not those submitted in hard copy. Our web address is:

www.submit2science.org

Yours sincerely,

Rachel Roberts

Rachel Roberts
Editorial Assistant

Science International
Bateman House, 82–88 Hills Road, Cambridge CB2 1LQ, UK
Tel: +44 (0) 1223 326 500 Fax: +44 (0) 1223 326 501
E-mail: science@science-int.co.uk

Science International is the business name of a U.K. branch of AAAS Science International, a U.S. company.
Corporate Registration No. FC17250. Branch Registration No. BR556. Vat No. 626138545

This repulsion letter also endows me with the title “doctor”, of which only origin can be the common interest of the British national secret political organization and the Illuminati of not giving place to the atheist philosophical-scientific ideas of my person besides their secret political satanist and religious propaganda carried out with the Hollywood film industry, the Mormon Church, the mainstream media, and so on. [Note: See my book entitled “My Repulsed Philosophical Theory and Its Repulsion”.]

1.2. Electronic submissions

In 2011, I somewhat further developed my general theory of the physical interactions and the electron model. As regards their submission to journals, I yielded priority to the electron model, as considered it more likely to be accepted for publication.

On 10 November 2011, I submitted by internet the electronic manuscript of the second version of my article entitled “Electron Model, Method and Formula for Calculating the Radii of Photons”, presented under point 2.4.2., reflecting the second stage of development of the electron model, to the Journal of Physics G of the Institute of Physics in London, submission acknowledged with the following e-mail:

FROM: esubs@iop.org
TO: I_Adorjan@yahoo.com
Message flagged
Thursday, November 10, 2011 11:41 AM

Dear Engineer Adorjan

Thank you for submitting your article "Electron model, method and formula for calculating the radii of photons" to Journal of Physics G: Nuclear and Particle Physics.

We will contact you if there are any problems with your files, otherwise within a few days you will be sent a permanent article ID so that you can track the progress of your article.

Yours sincerely

The Electronic Submissions Team

Dated 16 November 2011, I received a repulsion e-mail with a presumedly covering wording programing that the repulsion did not refer to my article particularly, but to the “type of article” generally, and it resulted from not a will, but an inability:

From: "jphysg@iop.org"
To: I_Adorjan@yahoo.com
Sent: Wednesday, November 16, 2011 5:27 PM
Subject: Final decision on your article from J. Phys. G: Nucl. Part. Phys. - G/413299/PAP/277955

Ref: G/413299/PAP/277955

16 November 2011

Dear Mr Adorjan

TITLE: Electron model, method and formula for calculating the radii of photons
AUTHORS: Mr Istvan Adorjan

Thank you for your submission to Journal of Physics G: Nuclear and Particle Physics. However, we do not publish this type of article in any of our journals and so we are unable to consider your article further.

Thank you for considering Journal of Physics G: Nuclear and Particle Physics.

Yours sincerely

Elaine Packer
Publishing Administrator
Journal of Physics G: Nuclear and Particle Physics

Publishing Team
Elaine Packer - Publishing Administrator
Rachel Lawless - Publisher
Rachael Kriefman - Production Editor

Contact Details
E-mail: jphysg@iop.org
Fax: +44 (0) 117 9200665

After my paper manuscripts were repeatedly neglected by the Physics Letters, around the middle of November 2011 I finally managed to submit the electronic manuscript of my above article to that jour-

nal. However, their answer of 20 November 2011 was quick and repulsive as well:

From: Andreas Ringwald <plb@desy.de>
To: I_Adorjan@yahoo.com
Sent: Sunday, November 20, 2011 3:32 PM
Subject: Your Submission

Ms. Ref. No.: PLB-D-11-01687
Title: Electron model, method and formula for calculating the radii of photons
Physics Letters B

Dear Eng. Istvan Adorjan,

I regret to inform you that your present submission will not be published in Physics Letters B.

My judgment is that this paper does not convincingly make the case that it achieves the level of novelty, urgency, interest and/or significance necessary to proceed with external review.

Yours sincerely,

Andreas Ringwald
Editor
Physics Letters B

As the motivation of the answer contained the subjective and possibly provocative element of “convincing”, in an instant reaction I tried to “convincingly make the case” of a publication, but the editor appeared to remain repulsive:

FROM: Istvan Adorjan
TO: plb@desy.de
Message flagged
Tuesday, November 22, 2011 10:55 AM
Subject: Electron model, method and formula for calculating the radii of photons
Ms. Ref. No. : PLB-D-11-01687
November 22, 2011
Dear Editor, Andreas Ringwald,
As a result of your criticism, I have inserted two new interpretation

items into my paper, with the following contents:
" 1) By essentially reproducing the formula and the value of the "classical" radius of the electron, the model proves to be consistent with the present knowledge, it not only asserts, but also self-corroborates the spatiality of the electron and photons;
2) the model refutes the concept of point-like particle of the Standard Model and demonstrates that it is not consistent with the present knowledge;"
Is my paper worthy of further consideration with the above modifications?
Please excuse my possible exaggerated persistence.
Yours sincerely,
Istvan Adorjan

On 12 December 2011, I submitted the electronic manuscript of the article entitled “Classical General Static Law of the Fundamental Physical Forces and Interactions”, presented under point 2.2.4., reflecting the fourth stage of development of my general theory of the physical interactions, to the journal Physica Scripta of the Institute of Physics in London, acknowledged with the following e-mail:

FROM: esubs@iop.org
TO: I_Adorjan@yahoo.com
Message flagged
Monday, December 12, 2011 12:05 PM

Dear Mr Adorjan

Thank you for submitting your article "Classical general static law of the fundamental physical forces and interactions" to Physica Scripta.

We will contact you if there are any problems with your files, otherwise within a few days you will be sent a permanent article ID so that you can track the progress of your article.

Yours sincerely

The Electronic Submissions Team

The motivation of the repulsion e-mail dated 16 December 2011 has the same wording than that of

the Journal of Physics G — both being of the same Institute of Physics — by this means creating the appearance that there is no personal secret policy relative to my person of the British national secret political organization, the repulsion originates in the editorial policy of the publisher, and there is nothing relating my person in it.

On 3 January 2012, I submitted the electronic manuscript of my above article to Physics Letters A, which was acknowledged with the following e-mail:

FROM: Physics Letters A
TO: I_Adorjan@yahoo.com
Message flagged
Tuesday, January 3, 2012 11:16 AM
Dear Eng. Adorjan,

Your submission entitled "Classical general static law of the fundamental physical forces and interactions" has been received by Physics Letters A

You may check on the progress of your paper by logging on to the Elsevier Editorial System as an author. The URL is http://ees.elsevier.com/pla/.

Your manuscript will be given a reference number once an Editor has been assigned.

Thank you for submitting your work to this journal.

Kind regards,

Elsevier Editorial System
Physics Letters A

The repulsion e-mail dated 18 January 2012 fails to motivate the repulsive decision:

FROM: P.R. Holland
TO: I_Adorjan@yahoo.com
Message flagged
Wednesday, January 18, 2012 5:53 PM
Ms. Ref. No.: PLA-D-12-00030
Title: Classical general static law of the fundamental physical forces and interactions
Physics Letters A

Dear Eng. Adorjan,

I regret that we cannot publish this work in Physics Letters A.

Yours sincerely,

P.R. Holland
Editor
Physics Letters A

In the following days and weeks, I further developed the electron model by considering it as a source of gravitons as well, by this means trying to predict as much as possible about those particles of the gravitational force and interaction, and I drafted the article entitled “Electron model and method yielding formulas of properties of photons and gravitons”, presented under point 2.4.3., reflecting the third stage of development of the electron model. However, I did not submit it for publication, because I knew that one may win the emulation with science, but hardly can do it with the national secret political organizations. In particular, on their part the stake was not publication, but whether they managed to get a pretext for “making the case” of my plagiary, namely my turning into a mock, but legal loser by deprivation of not only publicity, but also intellectual property.

2. The development of the general theories

2.1. Notarial statements

2.1.1. Two notarial statements of 16 January 2006

ELSŐ NYILATKOZAT–
FIRST STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), az Adalékok a fizikai rendszerek egy általános elméletéhez című fizikai elméletemmel kapcsolatos szerzői jogaim védelme céljából két nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

A 2005. december 22. és 2006 január 06. között felállított, Adalékok a fizikai rendszerek egy általános elméletéhez című elméletem első része a következő:

ADALÉKOK A FIZIKAI RENDSZEREK EGY ÁLTALÁNOS ELMÉLETÉHEZ A) Meghatározások: 1) Világ: A világ olyan, amilyennek feltárul az emberek előtt azok érzékein, kísérletein és tudományain keresztül. 2) Fizikai rendszer: A világ bármely élettelen tárgya fizikai rendszer. B) Kijelentések: 1) Szerkezet: Egy fizikai rendszert jellemző változó fizikai mennyiségek konkrét értékeit az őt összetevő véges számú fizikai elemek közötti kölcsönhatások adják. 2) Szerveződés: A fizikai rendszerek szerveződési szinteken szerveződnek. Az N-edik szerveződési szint egy fizikai rendszerének egy eleme az (N-1)-edik szerveződési szint egy fizikai rendszere. Az N-edik szerveződési szint egy fizikai rendszere az (N+1)-edik szerveződési szint egy fizikai eleme. 3) Szerveződési irányok: Egy adott szerveződési szinten belüli szerveződési irány a vízszintes szerveződési irány. A szerveződési szintek közötti szerveződési irány a függőleges szerveződési irány. 4) Vízszintes rendezhetőség: A fizikai rendszerek a fizikai tudományok által megfogalmazott meghatározások vagy egyéb kritériumok alapján vízszintesen fizikairendszer-osztályokba rendezhetők. 5) Függőleges rendezhetőség: A fizikairendszer-osztályok szerkezetük és függőleges szerveződésük alapján függőlegesen a fizikai rendszerek szerveződési szintjeibe rendezhetők. 6) Vízszintes korlátoltság: A fizikai rendszerek bármely szerveződési szintjén jellemzően létezik egy-egy olyan abszolút értékben legkisebb valós érték, amely alá nem süllyedhetnek, illetve egy-egy olyan abszolút értékben legnagyobb valós érték, amely fölé nem emelkedhetnek az illető szerveződési szint fizikairendszer-osztályait jellemző változó fizikai mennyiségek értékei. 7) Függőleges korláttalanság: A fizikai rendszereket jellemző változó fizikai mennyiségek függőlegesen az R–{0} valósszám-intervallumban alsó és felső korlátoltság nélkül vehetnek fel értékeket. 8) A nulla: A fizikairendszer-osztályokat jellemző változó fizikai mennyiségek a nullát értékként nem vehetik fel. A nulla a fizikairendszer-osztályokra jellemző változó fizikai mennyiségek nemlétének és szimmetriájának a jelképe. C) Megerősítések: 1) A fizikai világkép: A jelenlegi ismeretek szerint a fizikai rendszerek az „elemi" részecskék, atomok, molekulák, makroszkopikus testek, égitestek, galaxisok és a galaxishalmazok főbb szerveződési szintjeibe szerveződnek. Például, függőleges szerveződési irányban: a szénatom egy atommagból és tizenkét elektronból tevődik össze; az atommag része az atommagok osztályának és szerveződési szintjének, és rendszerint hat protonból és hat neutronból tevődik össze; a szénatom eleme a szénhidrogének osztályának és szerveződési szintjének. Vízszintes szerveződési irányban: a szénatom szerveződési szintje — az atomok szerveződési szintje — magába foglalja a viszonylag stabil atomok mint a kémiai „elemek" legkisebb összetevőinek az osztályát, a hidrogéntől a hahniumig. 2) A proton és az elektron közötti távolság. A hidrogénatom Schrödinger-féle egyenletének Ψ 100-as megoldásában R = 0-ra az atommag közepe — az atom szimmetriapontja — az elektron legvalószínűbb helyeként tűnik fel. 3) A matematikai nulla. Matematikai axióma, hogy a nullának nincs fordítottja. Sok fizikai esetben abszurd eredményhez vezet, el kell távolítani az értelmezési tartományból. A balról jobbra növekvően rendezett valós számok halmazát végtelen ponthalmazával reprezentáló koordináta-tengelyt a nulla szimmetrikusan osztja ketté létjogosultságuk szempontjából egyenrangú pozitív és negatív valósszám-alhalmazokra. Például az elektromosságtanban a nulla a pozitív és negatív értékek szimmetriapontját képezi az elektromos töltések tengelyén. A létjogosultság szempontjából nincs különbség a két félegyenes között. 4) Kvantumok. A kvantumosított változó fizikai mennyiségek esetében maguk a mennyiségkvantumok zárják ki a nullát és korlátozzák alulról abszolút értékben a felvehető valós értékek intervallumát. Rendszerint a fizikai állandók változó fizikai mennyiségek kvantumai vagy ezeknek tekinthetők. 5) A fotonok nyugalmi állapotának a nemléte. A fotonok nyugalmi tömege nem lehet nulla, mert a speciális relativitáselmélet értelmében a fotonok nyugalmi állapota nem létezik. 6) Az abszolút nulla hőmérséklet elérhetetlensége. A termodinamika harmadik princípiumából adódóan az abszolút nulla hőmérsékleti érték nem érhető el. 7) Korlátolt vízszintes intervallumok. A viszonylag stabil atomok tömegeinek rendezésével kapott korlátolt vízszintes atomtömeg-intervallum bal szélén a hidrogénatom, míg jobb szélén a hahniumatom tömege helyezkedik el. Előállíthatók nehezebb atomok is, de azok élettartama gyorsan megközelíti az „időtartam-kvantumot". Továbbá a csillagok szerveződési szintjén a rendezett csillagtömegek korlátolt vízszintes intervallumban tömörülnek össze, ami arra utal, hogy az intervallumon kívüli tömegű csillagok felfedezésének valószínűsége nagyon kicsi, és csökken az intervallumtól való távolodással.

Az Első Nyilatkozat angol nyelvű megfelelője a következő:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright of my physical theory entitled Contributions to a General Theory of the Physical Systems I present two statements to a notary public for its being certainly dated:

The first part of my physical theory entitled Contributions to a General Theory of the Physical Systems, set up between December 22, 2005 and January 06, 2006 is the following:

CONTRIBUTIONS TO A GENEARAL THEORY OF THE PHYSICAL SYSTEMS A) Definitions 1) World: The world is as it unfolds itself in front of the humans through their senses, experiments and sciences. 2) Physical system: Any senseless object of the world is a physical system. B) Enunciations1) Structure: The concrete values of the variable physical quantities characterizing a physical system are given by the interactions among the finite number of physical elements composing it. 2) Organization: The physical systems are organized in levels of organization. An element of a physical system of the N-th level of organization is a physical system of the (N-1)-th level of organization. A physical system of the N-th level of organization is a physical element of the (N+1)-th level of organization. 3) Directions of organization: The direction of organization inside of a given level of organization is the horizontal direction of organization. The direction of organization between the levels of organization is the vertical direction of organization. 4) Horizontal arrangeability: On the basis of the definitions formulated by the physical sciences or other criteria the physical systems can horizontally be arranged in classes of physical systems. 5) Vertical arrangeability: On the basis of their structure and organization the classes the physical systems can be vertically arranged in the levels of organization of the physical systems. 6) Horizontal limitedness: On any level of organization of the physical systems there characteristically is a smallest real value each, in modulus, under which cannot sink, and a biggest real value each, in modulus, respectively, above which cannot rise the values of the variable physical quantities characterizing the classes of physical systems of the respective level of organization. 7) Vertical unlimitedness: The variable physical quantities characterizing the classes of physical systems can vertically take up values from the R-{0} real-number interval unlimitedly. 8) The zero: The variable physical quantities characterizing the classes of physical systems cannot take up zero for a value. The zero is a symbol of the non-existence and the symmetry of the variable physical quantities characterizing the classes of physical systems. C) Corroborations 1) The physical world concept: According to the present knowledge the physical systems are organized in the main levels of organization of "elementary" particles, atoms, molecules, macroscopic bodies, celestial bodies, galaxies and clusters of galaxies. For example, in the vertical direction of organization: the carbon atom is composed of a nucleus and twelve electrons; the nucleus is an element of the class and level of organization of nuclei, it is regularly composed of six protons and six neutrons; the carbon atom is an element of the class and level of organization of hydrocarbons. In the horizontal level of organization: the level of organization of the carbon atom — the level of organization of the atoms — includes the class of the relatively stable atoms as the smallest components of the chemical "elements", from hydrogen to hahnium.. 2) The distance between proton and electron. In the solving Ψ 100 of the Schrödinger's equation for the hydrogen atom, for R=0 the center of the nucleus — the symmetry point of the atom — appears as being the most probable place of the electron. 3) The mathematical zero. It is a mathematical axiom that zero has no reverse, in many physical cases it leads to an absurd result, it must be cleared away from the domain of definition. The zero symmetrically divides in two the co-ordinate axle representing with its infinite heap of points the real-number heap arranged increasingly from left to right into sub-heaps of positive and negative real numbers equal from the point of view of the their reasons for the existence. For example, in electricity the zero constitutes the symmetry point of the positive and negative values of the axle of the electric charges. From the point of view of the reason for the existence there is no difference between the two half-lines. 4) Quanta. In case of the quantified variable physical quantities the quantity quanta themselves exclude the zero and limit in modulus from under the interval of the real values that can be taken up. Usually the physical constants are or can be considered quanta of variable physical quantities. 5) The non-existence of the photons' rest. The rest mass of the photons cannot be zero, because in accordance with the special relativity theory the rest state of the photons does not exist. 6) The unreachableness of the absolute-zero temperature. Resulting from the third principle of thermodynamics the absolute-zero temperature value cannot be reached. 7) Limied horizontal intervals. At the left edge of the limited horizontal interval of atomic mass, obtained by arranging the masses of the relatively stable atoms, the mass of the hydrogen atom, while at its right edge the mass of the hahnium atom are situated. Heavier atoms can be produced as well, but their lives quickly approach the "length-of-time quantum". Further, on the level of organization of stars the arranged star masses aggregate in a limited horizontal interval which indicate that the probability of discovering stars with masses outside of the interval is very small and decreases with the departure from the interval.

Dátum/Date: 2006. Január 06 /January 06, 2006.

Aláírás/Signature: Adorjá

Tanúsítvány:
Ügyszám: 230/2006.

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Tanúsítom, hogy **Adorjan Istvan** (Calugareni, 1959. december 20., anyja neve [redacted]) a túloldali okiratot előttem saját kezűleg írta alá. ----------
Ez a tanúsítvány az okiraton lévő aláírás valódiságát tanúsítja.----------
Kelt Budapesten, 2006. kettőezer-hatodik év január hó 16. tizenhatodik napján. ----------

dr Walkshöfer Katalin

doktor Walkshöfer Katalin
budapesti közjegyző

DR. WALKSHÖFER KATALIN közjegyző BUDAPEST

MÁSODIK NYILATKOZAT–
SECOND STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), az Adalékok a fizikai rendszerek egy általános elméletéhez című fizikai elméletemmel kapcsolatos szerzői jogaim védelme céljából két nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

A 2005. december 22. és 2006 január 06. között felállított, Adalékok a fizikai rendszerek egy általános elméletéhez című elméletem második része a következő:

I) D) Következtetések 1) Fizikaimennyiség-skálák felépítése. A jelenlegi fizikai világkép alapján a fizikai rendszereket jellemző változó fizikai mennyiségek értékeinek rendezésével vízszintes és függőleges skálák építhetők fel. A vízszintes skálák azt mutatnák, hogy egy adott szerveződési szint fizikairendszer-osztályait jellemző változó fizikai mennyiségek az R–{0} halmaz melyik konkrét korlátolt intervallumból vesznek fel értékeket, melyek a legkisebb és legnagyobb felvehető értékek, amelyek között viszonylag stabilok az adott szerveződési szint fizikai rendszerei. A függőleges skálákon össze lehetne vetni a vízszintes skálák intervallumait, meg lehetne állapítani, milyen mértékben töltik ki azok az R–{0} halmazt. A fizikaimennyisé-skálák többlet-információkat szolgáltathatnának a fizikai kutatás számára. 2). Newton második törvényének hatálya. A függőleges tömegskála negatív félegyenesének fizikai megfelelője az antianyag. Ha az anyag tömege pozitív, az antianyag tömege negatív. Ennek megfelelően az erő képletében az *m*-et mínusz *m*-mel szükséges helyettesíteni. 3) Az egyetemes gravitáció és antigravitáció törvénye. Tekintettel a két tömeg szorzatára, az egyetemes gravitáció törvénye érvényes az antianyagra is. Ennek megfelelően az érvényesség kiterjeszthető az anyag-antianyag kölcsönhatásra is. Így egy anyag-test és egy antianyag-test kölcsönhatásakor taszítóerő jön létre. 4) A testek hősugárzási spektrumai korlátlanok. A testek hősugárzásának — vízszintes — frekvenciaskáláján meghatározható egy-egy legkisebb, illetve egy-egy legnagyobb érték, amely alatt, illetve felett az emisszió nem létezik. 5) Fizikaimennyiség-kvantumok és mértékegységek meghatározása. Tekintettel a vízszintes skálák korlátoltságára, bármely szerveződési szinten meghatározhatók az illető fizikairendszer-osztályok változó fizikai mennyiségeinek „kvantumai", amelyek jellemzőek mindegyik osztályra. Így egy változó fizikai mennyiségnek minden szerveződési szinten minden fizikairendszer-osztályra meghatározható egy-egy jellemző természetes mértékegysége. 6) Az „univerzum" végtelensége. A jelenlegi ismeretek szerint a legnagyobb tömegű és méretű fizikai rendszerek a galaxishalmazok. Ebből kiindulva, a gravitáció törvénye alapján el kell fogadni a galaxishalmaz-halmazok, azaz a másodrendű galaxishalmazok létét, és így tovább, az N-edik rendű galaxishalmazok szerveződési szintjét is, ahol N bármekkora lehet. Következésképpen függőlegesen nem határozható meg egy legnagyobb tömeg és méret. 7) Az „elemi" részecskék oszthatósága. A jelenlegi ismeretek szerint a legkisebb tömeg és méret jellemezte fizikairendszer-osztály a fotonok osztálya. A szerveződési szintek számának felfelé való korláttalansága megalapozza ezek száma lefelé való korláttalanságának hipotézisét. Ennek megfelelően az „elemi" részecskék oszthatók. 8) A változó fizikai mennyiségek függőleges korláttalansága. A fizikai rendszerek függőleges, mindkét szerveződési irányban való végtelenségéből az következik, hogy az őket jellemző változó fizikai mennyiségek abszolút értékeit alulról csupán a nulla, felülről pedig csupán a végtelen korlátozza, azaz azok korláttalanok: az R–{0} intervallumból alsó és felső korlátoltság nélkül vehetnek fel értékeket. 9) A big-bang hipotézis tagadása. A fizikai rendszerek függőleges végtelensége nemcsak térbeli, de időbeli végtelenséget is jelent. Ennek megfelelően várható, hogy a teleszkópok a hipotetikus big-bang előtti időszakról a jelenleg látható világűr képéhez hasonló képet fognakfeltárni.

II) Az Adalékok a fizikai rendszerek egy általános elméletéhez című fizikai elméletemmel kapcsolatban célom ennek a fizikai közvélemény haladéktalan tudomására hozatala és, azt követően, a hivatásszerű integrálódásom az elméleti fizikai tudományos életbe. Ezért a fizika fejlődése és személyem szempontjából szükség van ez elméletem nyomtatott formában való haladéktalan közlésére, mindenekelőtt ott, ahol az elméleti fizikai tudományos élet legfőképpen zajlik.

III) Európában a nemzeti, az Egyesült Államokban a republikánus politikai erők az általános elméleteknek még a gondolatát is elutasítják. Ezért az Adalékok a fizikai rendszerek egy általános elméletéhez című fizikai elméletem tudományos folyóiratban való kiadatására irányított kísérleteim kitartó és huzamos ellenállásba fognak ütközni.

IV) Az Adalékok a fizikai rendszerek egy általános elméletéhez című fizikai elméletem tudományos formában való kiadását annak ebben a formájában és terjedelmében szándékozom elérni. Elméletemet nem akarom sem módosítani, sem részletesebben kifejteni, sem a kiadási vagy ki nem adási „folyamat" alatt vagy később betolandó személyekkel megosztani. A paragrafuscímek a dolgozat természetéből fakadnak. Habár ezek az áttekinthetőség — és jobb megérthetőség — célját is szolgálják, őket „kivonat"-tal helyettesíteni nem lehet. Továbbá nem lehet őket — dolgozatom viszonylag kis terjedelmével összhangban — felhasználni a kiadás valódi elodázási vagy elutasítási okainak az álcázására. Az elméletemnek e módon való kiadására irányított törekvésem nem fog

szünetelni vagy megszűnni és hatalom vagy erő alkalmazása nélkül nem szüneteltethető vagy szűntethető meg.

A Második Nyilatkozat angol nyelvű megfelelője a következő:
The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright of my physical theory entitled Contributions to a General Theory of the Physical Systems I present two statements to a notary public for its being certainly dated:
The second part of my physical theory entitled Contributions to a General Theory of the Physical Systems, set up between December 22, 2005 and January 06, 2006 is the following:
I) D) Conclusions 1) Building up scales of the physical quantities. On the basis of the present physical concept, with the arrangement of values of the variable physical quantities characterizing the physical systems, horizontal and vertical scales can be built up. The horizontal scales would show from which concrete limited interval of the R-{0} heap the variable physical quantities characterizing the classes of physical systems take up values, which are the smallest and biggest values that can be taken up, between which the given classes of physical systems are relatively stable. On the vertical scales, the intervals of the horizontal scales could be compared, it could be established in what measure they fill in the R-{0} heap. The scales of physical quantities may provide surplus information for the physical research. 2) The effect of Newton's second law.. The physical equivalent of the negative half-line of the vertical mass scale is anti-matter. If the mass of matter is positive, the mass of anti-matter is negative. Accordingly, in the formula of force the m is necessary to be replaced with minus m. The law of universal gravitation and anti-gravitation. In consideration of the product of the two masses, the law of universal gravitation applies to the anti-matter as well. Accordingly, the validity can be extended over the interaction of matter and anti-matter. In this way, on the interaction of a matter body and an anti-matter body, a repelling force comes into being.4) The heat-radiation spectra of bodies are limited. On the — horizontal — frequency scale of the thermal radiation of bodies, a smallest and a biggest values, respectively, can be determined each, under which and above which, respectively, the emission does not exist. 5) Establishing quanta and units of measure of physical quantities. In consideration of the limitedness of the horizontal scales, on any level of organization the quanta of variable physical quantities of the respective classes of physical systems can be determined, which are characteristic to each class. In this manner, for a variable physical quantity a characteristic natural unit of measure can be determined each, on all levels of organization for all classes of physical systems. 6) The infinity of the "universe". According to the present knowledge the physical systems with the biggest masses and dimensions are the clusters of galaxies. Starting from this, on the basis of the gravitation law it must be accepted the existence of the clusters of clusters of galaxies, namely the clusters of galaxies of second rank, and so on, the level of organization of the clusters of galaxies of N-th rank as well, where N can be whatever big. Consequently, vertically it cannot be determined a biggest mass and dimension. 7) The divisibility of the "elementary" particles. According to the present knowledge the class of physical system characterized by the smallest masses and dimensions is the class of photons. The unlimitedness upwards of the number of levels of organization substantiates the hypothesis of the unlimitedness downwards of the number of those. According to this the "elementary" particles are divisible. 8) The vertical unlimitedness of the variable physical quantities. It results from the vertical infinity, in both directions of organization of the physical systems, that the absolute values of the variable physical quantities characterizing them can be limited only by the zero from under and only by the infinite from above, namely they are unlimited: they can take up values from the interval R-{0} without lower and upper limitedness. 9) The negation of the big-bang hypothesis. The vertical infinity of the physical systems means not only spatial, but also temporal infinity. According to this, it is to be expected that the telescopes will explore about the period before the hypothetical big-bang an image similar to the image of the cosmic space visible at present.

II) In relation to my theory entitled Contributions to a General Theory of the Physical Systems my purpose is its pompt communication to the physical public opinion and thereafter my professional integration in the theoretical physical scientific life in order to solve the great problemms of that. For this reason, from the point of view of the progress of the theoretical physics and of my person it is necessary to promptly publish my theory in a printed form, first of all where the theoretical physical scientific life is mainly taking place.
III) In Europe the national, in the United States the republican political forces reject even the idea of a general theory. For this reason my trials aimed at having my physical theory entitled Contributions to a General Theory of the Physical Systems published in a scientifical magazine will come up against a persevering and lasting resistance.
IV) I intend to reach the edition in a scientific magazine of my physical theory entitled Contributions to a General Theory of the Physical Systems in this form and extent of it. I want neither to modify, nor to expound in more details, nor to share my theory with persons to be pushed in during the "process" of edition or non-edition or at a later date. The paragraph titles derive from the nature of the paper. They as well serve the purpose of lucidity — and of a better understandability — though, they cannot be replaced with an "abstract". Further, they cannot be utilized — in conformity with the relatively small extent of my paper — for masking the real motives

of putting off or refusing the edition. My endeavor aimed at the edition of my theory in this manner will not pause or end and without using power or force it cannot be stopped or terminated

Dátum/Date: 2006. Január 06./January 06, 2006 Aláírás/Signature: Adorjan

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Tanúsítvány:
Ügyszám: 231/2006.

Tanúsítom, hogy **Adorian Istvan** (Calugareni, 1959. december 20., anyja neve

fenti okiratot előttem saját kezűleg írta alá. ----------
Ez a tanúsítvány az okiraton lévő aláírás valódiságát tanúsítja.----------
Kelt Budapesten, 2006. kettőezer-hatodik év január hó 16. tizenhatodik napján. ----------

dr Walkshöfer Katalin

doktor Walkshöfer Katalin
budapesti közjegyző

DR. WALKSHÖFER KATALIN közjegyző BUDAPEST

2.1.2. Four notarial statements of 17 July 2006

ELSŐ NYILATKOZAT — FIRST STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), az Adalékok a fizikai rendszerek egy általános elméletéhez, valamint A radiális sztatikus elektromos és gravitációs erők egyesítése című fizikai elméleteimmel kapcsolatos szerzői jogaim védelme céljából négy nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

Az Adalékok a fizikai rendszerek egy általános elméletéhez című fizikai elméletem 2006. június 11. és 14 között a következőképpen módosítottam:

I) A (C) rész (1)-es pontjában szövegcsere: „Például, függőleges szerveződési irányban: a grafit szabályos hatszögekbe szerveződött szénatomokból álló lapok alkotják, amelyek elemei a molekulák osztályának és szerveződési szintjének; a lapok szénatomjai elemei az atomok osztályának és szerveződési szintjének; kőzetként a grafit eleme a litoszférának, a Föld bolygó egyik alkotóelemének. Vízszintes szerveződési irányban: a társadalmi használatba vont anyagként a grafit eleme a makroszkopikus testek osztályának és szerveződési szintjének." =

II) Pontbeiktatás: „3) Az erős kölcsönhatás esetében meghatározható egy maximális interakció-távolság."=

III) Pontbeiktatás: „4) Az ütközés. Két test egymással közvetlen fizikai érintkezésbe lépéseként értelmezve az ütközést, általában meghatározható úgy egy minimális, mind egy maximális ütközési távolság két egymással ütköző konkrét test tömegpontja között. A gömb alakú merev, ideális test esetében a minimális és a maximális ütközési távolság egybeesik."

IV) Pontcsere: „5) A hidrogénatom mérete. A hidrogénatom Bohr-modelljében a proton és az elektron közötti minimális távolság 0,529 Å. A spektrumban a felső frekvencia-határvonalak és az azokat követő folytonos szakaszok azt bizonyítják, hogy a hidrogénatom maximális sugara véges és meghatározható."

V) A (D) részbe pontbeiktatás: „4) Az elektromágneses és a gravitációs erők véges hatósugara. Az elektromágneses és a gravitációs kölcsönhatások esetében is meghatározhatóak olyan maximális távolságok, amelyeken túl az elektromágneses, illetve a gravitációs kölcsönhatás megszűnik létezni két konkrét test között. Meghatározva a radiális sztatikus interakció-fluxust mint a forrástest radiális sztatikus fluxusának azt a részét, amelyet a vele kölcsönhatásban levő testre fordít, illetve ennek minimális értékét mint azt, amely kísérletileg még vagy már kimutatható, (Folytatása a Második Nyilatkozatban)

Az Első Nyilatkozat angol nyelvű megfelelője a következő:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright of my physical theories entitled Contributions to a general theory of the physical systems and A unification of the radial static electric and gravitational forces, respectively, I present four statements to the notary public for its being certainly dated:

My physical theory entitled Contributions to a general theory of the physical systems was modified between 11 and 14 June, 2006 as follows:

I) In Part (C) exchange of text: „For example, in the vertical direction of organization: the graphite is formed by sheets composed of carbon atoms organized in regular hexagons, which are elements of the class and level of organization of molecules; the carbon atoms of the sheets are elements of the class and level of organization of atoms; as a rock the graphite is an element of the lithosphere, a constituting element of the Earth planet. In the horizontal direction of organization: as a material drawn into the social use the graphite is an element of the class and level of organization of the macroscopic bodies."

II) Point insertion: „3) The strong interaction. In case of the strong interaction it can be established a maximum distance of interaction."

III) Point insertion: „4) The collision. Having defined the collision as the getting into immediate physical touch with each other of two bodies, generally it can be established both a minimum and a maximum collision distance between the mass centers of two concrete bodies colliding with each other. In case of the spherical rigid, ideal body the minimum and the maximum collision distances coincide."

IV) Point exchange: „5) The dimension of the hydrogen atom. In the Bohr model of the hydrogen atom the minimum distance between the proton and the electron is 0.529 Å. In the spectrum the upper frequency limit-lines and the continuous sections following them prove that the maximum ray of the hydrogen atom is finite and it cam be established."

V) In Part (D) Point insertion: „4) The finite radii of action of the electromagnetic and gravitational forces. In the cases of the electromagnetic and the gravitational interactions it can as well be established such maximum distances, beyond which the electromagnetic and the gravitational interactions, respectively, cease to exist between two concrete bodies. Having defined the radial static interaction flux as that part of the flux of the source body, which it turns to the body being in interaction with it, and its minimal value, respectively, as that, which can still or already be detected experimentally, (The continuation in the Second Statement)

Dátum/Date: 2006. Július 12. / July 12, 2006 Aláírás/Signature: Adorján

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H: 2582/2006. ügyszám
Alulírott közjegyző tanusítom, hogy ezt a nyilatkozatot Adorjan Istvan ----
(Calugareni/Románia, 1959.12.20.)
alatti lakos aki személyazonosságát
előttem saját kezűleg írta alá.----------
Budapest, 2006. Kettőezer-hatodik évi július hó 17. Tizenhetedik napján.-

doktor Megyeri Zsuzsanna
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MÁSODIK NYILATKOZAT — SECOND STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), az Adalékok a fizikai rendszerek egy általános elméletéhez, valamint A radiális sztatikus elektromos és gravitációs erők egyesítése című fizikai elméleteimmel kapcsolatos szerzői jogaim védelme céljából négy nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

Az Adalékok a fizikai rendszerek egy általános elméletéhez című fizikai elméletem 2006. június 11. és 14 között a következőképpen módosítottam:

(Folytatás az Első Nyilatkozatból) megadhatók az X és Y gömb alakú r_X, illetve r_Y sugarú testek közötti maximális elektromos, illetve gravitációs interakció-távolságok kiszámítására alkalmas képletek: $d_M = 1/2\ (\Phi_X / \Phi_{Xm}^*)^{1/5}\ r_Y = 1/2\ (\Phi_Y / \Phi_{Ym}^*)^{1/5}\ r_X$, amelyekben: Φ_X és Φ_Y — X, illetve Y által produkált elektromos vagy gravitációs radiális sztatikus fluxusok, Φ_{Xm}^* és Φ_{Ym}^* — X, illetve Y minimális elektromos vagy gravitációs radiális sztatikus interakció-fluxusai."

My physical theory entitled Contributions to a general theory of the physical systems was modified between 11 and 14 June, 2006 as follows:

(Continuation from the First Statement) the formulas fit for calculating the maximum electric and, respectively, gravitational interaction distances between the X and Y spherical bodies, with the rays r_X and r_Y , respectively, can be supplied: $d_M = 1/2\ (\Phi_X / \Phi'_{Xm})^{1/5}\ r_Y = 1/2\ (\Phi_Y / \Phi'_{Ym})^{1/5}\ r_X$, in which: Φ_X and Φ_Y — the electric or gravitational radial static interaction fluxes produced by X and Y, respectively, Φ'_{Xm} and Φ'_{Ym} — the minimum electric or gravitational radial static interaction fluxes produced by X and Y, respectively."

A 2006. június 14 és július 07 között felállított, A radiális sztatikus elektronos és gravitációs erők egyesítése című fizikai elméletem első részének tartalma a következő:

The content of the first part of my physical theory entitled A unification of the radial static electric and gravitational forces, set up between 14 June and 07 July, 2006, is the following:

A radiális sztatikus elektromos és gravitációs erők egyesítése [A unification of the radial static electric and gravitational forces] / A) Egyesítési lépések [Unification steps] / 1) A radiális sztatikus elektromos és gravitációs interakció-fluxus formalizációja [The formularization of the radial static electric and gravitational interaction flux] / Legyen X és Y két, gömb alakú, r_X, illetve r_Y sugarú, egyenletes töltés-, illetve tömegeloszlású, nyugalmi állapotban egymástól d távolságra levő test, amelyek a Φ_{XE} és Φ_{YE}, illetve a Φ_{XG} és Φ_{YG} radiális sztatikus elektromos, illetve gravitációs mezőfluxusokat produkálják maguk körül. [Be X and Y two spherical bodies with the rays r_X and r_Y, respectively, having uniform charge and, respectively, mass distributions, being at rest at the distance d from each other, which produce around themselves the radial static electric and, respectively, gravitational-field fluxes Φ_{XE} and Φ_{YE}, and, respectively, Φ_{XG} and Φ_{YG}.] / a) $d >> r_X$ és r_Y / $\Phi_{XE}^* = \Phi_{XE}\ S_X^* / 4\ \pi\ d^2$ (1) és $\Phi_{YE}^* = \Phi_{YE}\ S_Y^* / 4\ \pi\ d^2$ (2), / illetve $\Phi_{XG}^* = \Phi_{XG}\ S_X^* / 4\ \pi\ d^2$ (3) és $\Phi_{YG}^* = \Phi_{YG}\ S_Y^* / 4\ \pi\ d^2$ (4), / valamint $S_X^* = \pi\ r_Y^2$ (5) és $S_Y^* = \pi\ r_X^2$ (6), / amelyekben [in which]: Φ_{XE}^* — X radiális sztatikus elektromos interakció-fluxusa [the radial static electric interaction flux of X], [N m^2 / C], Φ_{YE}^* — Y radiális sztatikus elektromos interakció-fluxusa [the radial static electric interaction flux of Y], [N m^2 / C], Φ_{XG}^* — X radiális sztatikus gravitációs interakció-fluxusa [the radial static gravitational interaction flux of X], [N m^2 / kg], Φ_{YG}^* — Y radiális sztatikus gravitációs interakció-fluxusa [the radial static gravitational interaction flux of Y], [N m^2 / kg], Φ_{XE} és Φ_{YE} — X, illetve Y radiális sztatikus elektromos fluxusai [the radial static electric fluxes of X and Y, respectively], [N m^2 / C], Φ_{XG} és Φ_{YG} — X, illetve Y radiális sztatikus gravitációs fluxusai [the radial static gravitational fluxes of X and Y, respectively], [N m^2 / kg], S_X^* és S_Y^* — X, illetve Y radiális sztatikus kölcsönhatásifluxus-felületei [the radial static interaction-flux surfaces of X and Y, respectively], [m^2]. / $\Phi_{XE} = \delta_0\ q_X$ (7) és $\Phi_{YE} = \delta_0\ q_Y$ (8), / illetve $\Phi_{XG} = \gamma_0\ m_X$ (9) és $\Phi_{YG} = \gamma_0\ m_Y$ (10), / amelyekben: δ_0 — a radiális sztatikus elektromos mező vákuumbeli fajfluxusa [the specific flux in vacuum of the radial static electric field], [N m^2 / C^2], q_X és q_Y — X, illetve Y töltései [the charges of X and Y, respectively], [C], γ_0 — a radiális sztatikus gravitációs mező vákuumbeli fajfluxusa [the specific flux in vacuum of the radial static gravitational field], [N m^2 / kg^2], m_X és m_Y — X, illetve Y tömegei [the masses of X and Y, respectively], [kg]. / Az (1) - (10) alapján [On the basis of]: $\Phi_{XE}^* = \delta_0\ q_X\ r_Y^2 / 4\ d^2$ (11) és $\Phi_{YE}^* = \delta_0\ q_Y\ r_X^2 / 4\ d^2$ (12), / illetve $\Phi_{XG}^* = \gamma_0\ m_X\ r_Y^2 / 4\ d^2$ (13) és $\Phi_{YG}^* = \gamma_0\ m_Y\ r_X^2 / 4\ d^2$ (14). / b) $d \sim r_X$ és r_Y / $\Phi_{XE}^* = \Phi_{XE}\ S_X^* / 4\ \pi\ d^2 \cos^2\alpha$ (15) és $\Phi_{YE}^* = \Phi_{YE}\ S_Y^* / 4\ \pi\ d^2 \cos^2\beta$ (16), / illetve $\Phi_{XG}^* = \Phi_{XG}\ S_X^* / 4\ \pi\ d^2 \cos^2\alpha$ (17) és $\Phi_{YG}^* = \Phi_{YG}\ S_Y^* / 4\ \pi\ d^2 \cos^2\beta$ (18), / valamint $S_X^* = \pi \cos\alpha\ (2\ d^2 \cos\alpha - d^2 - d^2 \cos^2\alpha + r_Y^2)$ (19) és $S_Y^* = \pi \cos\beta\ (2\ d^2 \cos\beta - d^2 - d^2 \cos^2\beta + r_X^2)$ (20), / amelyekben: α és β — az X és Y középpontjait összekötő egyenes és az X középpontjából Y, illetve az Y középpontjából X felületére húzott tangensek által meghatározott szögek (Folytatása a Harmadik Nyilatkozatban — The continuation in the Third Statement)

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HARMADIK NYILATKOZAT — THIRD STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), az Adalékok a fizikai rendszerek egy általános elméletéhez, valamint A radiális sztatikus elektromos és gravitációs erők egyesítése című fizikai elméleteimmel kapcsolatos szerzői jogaim védelme céljából négy nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

A 2006. június 14 és július 07 között felállított, A radiális sztatikus elektronos és gravitációs erők egyesítése című fizikai elméletem második részének tartalma a következő:

The content of the second part of my physical theory entitled A unification of the radial static electric and gravitational forces, set up between 14 June and 07 July, 2006, is the following:

(Folytatás a Második Nyilatkozatból — Continuation from the Second Statement) / [the angles determined by the straight line linking the centers of X and Y and the tangents drawn from the centers of X and Y, respectively, to the surfaces of Y and X, respectively] / $r_Y^2 / d^2 = \sin^2\alpha$ (21) és $r_X^2 / d^2 = \sin^2\beta$ (22). / A (15) – (22) és (5) – (8) alapján: $\Phi_{XE}^* = \delta_0 q_X (1 - \cos\alpha) / 2$ (23) és $\Phi_{YE}^* = \delta_0 q_Y (1 - \cos\beta) / 2$ (24), / illetve $\Phi_{XG}^* = \gamma_0 m_X (1 - \cos\alpha) / 2$ (25) és $\Phi_{YG}^* = \gamma_0 m_Y (1 - \cos\beta) / 2$ (26). / 2) A radiális sztatikus elektromos és gravitációs erők radiális sztatikus interakció-fluxusokkal való formalizációja [The formularization of the radial static electric and gravitational forces with radial static interaction fluxes] / $F_{XE} = \sigma_{XE} \Phi_{XE}^*$ (27) és $F_{YE} = \sigma_{YE} \Phi_{YE}^*$ (28), / illetve $F_{XG} = \sigma_{XG} \Phi_{XG}^*$ (29) és $F_{YG} = \sigma_{YG} \Phi_{YG}^*$ (30), / amelyekben: F_{XE} és F_{XG} — az X által Y-ra kifejtett radiális sztatikus elektromos, illetve gravitációs erők [the radial static electric and, respectively, gravitational forces exerted by X onto Y], [N], F_{YE} és F_{YG} — az Y által X-re kifejtett radiális sztatikus elektromos, illetve gravitációs erők, [N], σ_{XE} és σ_{YE} — X, illetve Y elektromoserő-faktorai [the electric-force factors of X and Y, respectively], [C / m^2], σ_{XG} és σ_{YG} — X, illetve Y gravitációserő-faktorai [the gravitational-force factors of X and Y, respectively], [kg / m^2]. / $F_{XE} = F_{YE} = F_E \Leftrightarrow \Phi_{XE}^* / \Phi_{YE}^* = \sigma_{YE} / \sigma_{XE}$ (31), / illetve $F_{XG} = F_{YG} = F_G \Leftrightarrow \Phi_{XG}^* / \Phi_{YG}^* = \sigma_{YG} / \sigma_{XG}$ (32). a) $d >> r_X$ és r_Y / A (31),(1),(2),(7) és (8), illetve a (32),(3),(4),(9) és (10) alapján: / $\Phi_{XE}^* / \Phi_{YE}^* = \sigma_{YE} / \sigma_{XE} = q_X S_X^* / q_Y S_Y^*$ (33), / illetve $\Phi_{XG}^* / \Phi_{YG}^* = \sigma_{YG} / \sigma_{XG} = m_X S_X^* / m_Y S_Y^*$ (34). / $\sigma_{XE} = q_Y / S_X^* = q_Y / \pi r_Y^2$ (35) és $\sigma_{YE} = q_X / S_Y^* = q_X / \pi r_X^2$ (36), / illetve $\sigma_{XG} = m_Y / S_X^* = m_Y / \pi r_Y^2$ (37) és $\sigma_{YG} = m_X / S_Y^* = m_X / \pi r_X^2$ (38). / b) $d \sim r_X$ és r_Y / A (31), (15), (16), (7) és (8), illetve a (32),(17), (18), (9) és (10) alapján: / $\Phi_{XE}^* / \Phi_{YE}^* = \sigma_{YE} / \sigma_{XE} = q_X S_X^* \cos^2\alpha / q_Y S_Y^* \cos^2\beta$ (39), / illetve $\Phi_{XG}^* / \Phi_{YG}^* = \sigma_{YG} / \sigma_{XG} = m_X S_X^* \cos^2\alpha / m_Y S_Y^* \cos^2\beta$ (40). / $\sigma_{XE} = q_Y \cos^2\alpha / S_X^*$ (41) és $\sigma_{YE} = q_X \cos^2\beta / S_Y^*$ (42), / illetve $\sigma_{XG} = m_Y \cos^2\alpha / S_X^*$ (43) és $\sigma_{YG} = m_X \cos^2\beta / S_Y^*$ (44). / A (41), (42), (15), (16), (21) és (22), illetve a (43), (44), (17), (18), (21) és (22) alapján: / $\sigma_{XE} = q_Y (1 + \cos\alpha) / 2 \pi r_Y^2$ (45) és $\sigma_{YE} = q_X (1 + \cos\beta) / 2 \pi r_X^2$ (46), / illetve $\sigma_{XG} = m_Y (1 + \cos\alpha) / 2 \pi r_Y^2$ (47) és $\sigma_{YG} = m_X (1 + \cos\beta) / 2 \pi r_X^2$ (48). / 3) A radiális sztatikus elektromos és gravitációs interakció-fajfelület formalizációja [The formularization of the radial static electric and gravitational interaction specific surface] / a) $d >> r_X$ és r_Y / A (35) – (38) alapján: / $\Sigma_{XE}^* = 1 / \sigma_{XE} = \pi r_Y^2 / q_Y$ (49) és $\Sigma_{YE}^* = 1 / \sigma_{YE} = \pi r_X^2 / q_X$ (50), / illetve $\Sigma_{XG}^* = 1 / \sigma_{XG} = \pi r_Y^2 / m_Y$ (51) és $\Sigma_{YG}^* = 1 / \sigma_{YG} = \pi r_X^2 / m_X$ (52), / amelyekben: Σ_{XE}^* és Σ_{YE}^* — F_{XE}, illetve F_{YE} radiális sztatikus elektromos interakció-fajfelületei [the radial static electric interaction specific surfaces of F_{XE} and F_{YE}, respectively], [m^2 / C], Σ_{XG}^* és Σ_{YG}^* — F_{XG}, illetve F_{YG} radiális sztatikus gravitációs interakció-fajfelületei, [m^2 / kg]. / b) $d \sim r_X$ és r_Y / A (45) – (48) alapján: / $\Sigma_{XE}^* = 2 \pi r_Y^2 / q_Y (1 + \cos\alpha)$ (53) és $\Sigma_{YE}^* = 2 \pi r_X^2 / q_X (1 + \cos\beta)$ (54), / illetve $\Sigma_{XG}^* = 2 \pi r_Y^2 / m_Y (1 + \cos\alpha)$ (55) és $\Sigma_{YG}^* = 2 \pi r_X^2 / m_X (1 + \cos\beta)$ (56). / 4) A radiális sztatikus elektromos és gravitációs erők radiális sztatikus interakció-fluxusokkal és interakció-fajfelületekkel való formalizációja [The formularization of the radial static electric and gravitational forces with radial static interaction fluxes and interaction speciific surfaces] / A (27) és (30), illetve a (49) és (52) alapján: / $F_{XE} = \Phi_{XE}^* / \Sigma_{XE}^*$ (57) és $F_{YE} = \Phi_{YE}^* / \Sigma_{YE}^*$ (58), / illetve $F_{XG} = \Phi_{XG}^* / \Sigma_{XG}^*$ (59) és $F_{YG} = \Phi_{YG}^* / \Sigma_{YG}^*$ (60). / 5) A radiális sztatikus elektromos és gravitációs erők egyesítése [The unification of the radial static electric and gravitational forces] / 5.1) A radiális sztatikus interakció-fluxus formalizációja [The formularization of the radial static interaction flux] / X és Y radiális sztatikus mezőforrásokkal rendelkeznek, amelyek mértékegysége az U, es a Φ_X és Φ_Y radiális sztatikus mezőfluxusokat produkálják maguk körül. [X and Y dispose of radial static-field sources, of which unit of measure is Up and they produce around themselves the radial static-field fluxes Φ_X and Φ_Y] / a) $d >> r_X$ és r_Y / $\Phi_X^* = \Phi_X S_X^* / 4 \pi d^2$ (61) és $\Phi_Y^* = \Phi_Y S_Y^* / 4 \pi d^2$ (62), / amelyekben: Φ_X^* — X radiális sztatikus interakció-fluxusa, [N m^2 / U], Φ_Y^* — Y radiális sztatikus interakció-fluxusa, [N m^2 / U]. / $\Phi_X = \varphi_0 u_X$ (63) és $\Phi_Y = \varphi_0 u_Y$ (64), / amelyekben: φ_0 — a radiális sztatikus mező vákuumbeli fajfluxusa, [N m^2 / U^2], u_X és u_Y — X, illetve Y radiális sztatikus mezőforrásai, [U]. / a) A (61) – (64), (5) és (6) alapján: / $\Phi_X^* = \varphi_0 u_X r_Y^2 / 4 d^2$ (65) és $\Phi_Y^* = \varphi_0 u_Y r_X^2 / 4 d^2$ (66) / b) $d \sim r_X$ és r_Y / $\Phi_X^* = \Phi_X S_X^* / 4 \pi d^2 \cos^2\alpha$ (67) és $\Phi_Y^* = \Phi_Y S_Y^* / 4 \pi d^2 \cos^2\beta$ (68). / A (67), (68), (63), (64), (19) és (20) alapján: $\Phi_X^* = \varphi_0 u_X (1 - \cos\alpha) / 2$ (69) és $\Phi_Y^* = \varphi_0 u_Y (1 - \cos\beta) / 2$ (70). / (Folytatása a Negyedik Nyilatkozatban — The continuation in the Fourth Statement)

Dátum/Date: 2006. Július 12. / July 12, 2006 Aláírás/Signature:

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Adószám: 41438165-1-42
Számlaszám: 11706016-20808941

H: 2582/2006. ügyszám
Alulírott közjegyző tanusítom, hogy ezt a nyilatkozatot Adorjan Istvan----
(Calugareni/Románia, 1959.12.20.) [redacted]
alatti lakos aki személyazonosságát [redacted] előttem saját kezűleg írta alá.----------
Budapest, 2006. Kettőezer-hatodik évi július hó 17. Tizenhetedik napján.-

doktor Megyeri Zsuzsanna
budapesti közjegyző

NEGYEDIK NYILATKOZAT — FOURTH STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), az Adalékok a fizikai rendszerek egy általános elméletéhez, valamint A radiális sztatikus elektromos és gravitációs erők egyesítése című fizikai elméleteimmel kapcsolatos szerzői jogaim védelme céljából négy nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

A 2006. június 14 és július 07 között felállított, A radiális sztatikus elektronos és gravitációs erők egyesítése című fizikai elméletem harmadik részének tartalma a következő:

The content of the third part of my physical theory entitled A unification of the radial static electric and gravitational forces, set up between 14 June and 07 July, 2006, is the following:

(Folytatás a Harmadik Nyilatkozatból — Continuation from the Third Statement) 5.2)A radiális sztatikus interakció-fajfelület formalizációja [The formularization of the radial static interaction speciific surface] / a) $d >> r_X$ és r_Y / $\Sigma_X^* = S_X^* / u_Y = \pi r_Y^2 / u_Y$ (71) és $\Sigma_Y^* = S_Y^* / u_X = \pi r_X^2 / u_X$ (72), / amelyekben: Σ_X^* és Σ_Y^* — F_X, illetve F_Y radiális sztatikus interakció-fajfelületei, [m^2 / U]. / b) $d \sim r_X$ és r_Y / $\Sigma_X^* = S_X^* / u_Y \cos^2\alpha = 2 \pi r_Y^2 / u_Y (1 + \cos \alpha)$ (73) és $\Sigma_Y^* = S_Y^* / u_X \cos^2\beta = 2 \pi r_X^2 / u_X (1 + \cos \beta)$ (74). / 5.3) A radiális sztatikus erők interakció-fluxusokkal és interakció-fajfelületekkel való formalizációja [The formularization of the radial static forces with interaction fluxes and interaction speciific surfaces] / $F_X = \Phi_X^* / \Sigma_X^*$ (75) és $F_Y = \Phi_Y^* / \Sigma_Y^*$ (76), / amelyekben: F_X — az X által Y–ra gyakorolt radiális sztatikus erő, [N], F_Y — az Y által X–re gyakorolt radiális sztatikus erő, [N]. / B) Megerősítések [Corroborations] / A (75), (76), (65), (66), (71) és (72), illetve a (75), (76), (67), (68), (73), (74),(21) és (22) alapján: / $F_X = F_Y = F = \varphi_0 u_X u_Y / 4 \pi d^2$ (77), / amelyben: F — X és Y radiális sztatikus kölcsönhatásának ereje, [N]. / 1) Coulomb törvényének a levezetése és az elektromos fajfluxus formalizációja [The deduction of the law of Coulomb and the formularization of the electric specific flux] / $\varphi_0 = \delta_0$ (78), $u_X = q_X$ (79) és $u_Y = q_Y$ (80). / A (77) – (80) alapján: / $F_E = \delta_0 q_X q_Y / 4 \pi d^2$ (81), / amelyben: F_E — X és Y radiális sztatikus elektromos kölcsönhatásának ereje, [N]. / Gauss törvénye szerint [According to the law of Gauss]: $\Phi_{XE} = q_X / \varepsilon_0$ (82) és $\Phi_{YE} = q_Y / \varepsilon_0$ (83), / amelyekben: ε_0 — a permitivitási állandó, [C^2 /N m^2]. / A (82), (83),(7) és (8) alapján: / $\delta_0 = 1 / \varepsilon_0$ (84). / A (81) és (84) alapján: / $F_E = q_X q_Y / 4 \pi \varepsilon_0 d^2$ (85). / 2) Newton törvényének a levezetése és a gravitációs fajfluxus formalizációja [The deduction of the law of Newton and the formularization of the gravitational specific flux] / $\varphi_0 = \gamma_0$ (86), $u_X = m_X$ (87) és $u_Y = m_Y$ (88). / A (77), (86) – (88) alapján: / $F_G = \gamma_0 m_X m_Y / 4 \pi d^2$ (89), / amelyben: F_G — X és Y radiális sztatikus gravitációs kölcsönhatásának ereje, [N]. / Gauss törvénye alapján: / $\Phi_{XG} = 4 \pi G m_X$ (90) és $\Phi_{YG} = 4 \pi G m_Y$ (91), / amelyekben: G — a gravitációs állandó,[N m2 / C^2]. / A (90), (91), (9) és (10) alapján: / $\gamma_0 = 4 \pi G$ (92). / A (89) és (92) alapján: / $F_G = G m_X m_Y / d^2$ (93). / C) A radiális sztatikus interakció-mutató formalizációja [The formularization of the radial static interaction index] / a) $d >> r_X$ és r_Y / A (65), (66), (73) és (74) alapján: $\Phi_X^* / \Phi_Y^* = \Sigma_X^* / \Sigma_Y^* = u_X r_Y^2 / u_Y r_X^2 = f$ (94), / amelyben: f — X és Y radiális sztatikus kölcsönhatásának radiális sztatikus interakció-mutatója [the radial static interaction index of the radial static interaction of X and Y]. / Ha $u_X = u_Y$ és $r_X = r_Y$ — amely esetben a (94) szerint f = 1 — X és Y radiális sztatikus kölcsönhatásukban egyenrangúak. A (94)–t a naprendszerre alkalmazva ($u_X = m_X$, $u_Y = m_Y$ és $f = f_G$) f_G minden esetben a nap javára nagyobb egynél (X a nap). Továbbá, az atommagok és az elektron kölcsönhatásában ($u_X = q_X$, $u_Y = q_Y$ és $f = f_E$) $f_E > 1$ az atommagok javára (az X–ek az atommagok. A lítiumtól kezdődően a +1 töltésű ionok és az elektron elektromos kölcsönhatásában f_E az elektron javára nagyobb mint egy (X az elektron). A (94) alapján: $f = u_X / r_X^2 \,//\, u_Y / r_Y^2$ (95). / A (95) szerint f kifejezhető mint X és Y tulajdonságainak aránya. Mindezekből az következik, hogy a radiális sztatikus interakció-mutató X és Y radiális sztatikus kölcsönhatásában — és csupán az adott kölcsönhatás vonatkozásában — a felülrendelt szerepét mutatja annak a kölcsönható félnek, amely javára f > 1. [If $u_X = u_Y$ and $r_X = r_Y$ — in which case according to (94) f = 1 — X and Y are equal in rank in their interaction. Applying (94) to the solar system ($u_X = m_X$, $u_Y = m_Y$ and $f = f_G$) in every case f_G is larger than one in favor of the sun (X is the sun). Further, in the electric interaction of the nuclei and the electron ($u_X = q_X$, $u_Y = q_Y$ és $f = f_E$) $f_E > 1$ in favor of the nuclei (the Xs are the nuclei). Beginning from the lithium, in the electric interaction of the ions charged +1 and the electron f_E is larger than one in favor of the electron (X is the electron). According to (94) f can be expressed as a ratio of the properties of X and Y. From all these it results that in the radial static interaction of X and Y — and only in respect of the given interaction — the interaction index indicates the super-ordinate role of that interacting part in favor of which f > 1.] / b) $d \sim r_X$ és r_Y / A (69), (70), (73), (74), (21) és (22) alapján: / $f = \Phi_X^* / \Phi_Y^* = \Sigma_X^* / \Sigma_Y^* = u_X (1 - \cos \alpha) / u_Y (1 - \cos \beta)$ (96).

Dátum/Date: 2006. Július 12. / July 12, 2006 Aláírás/Signature: Adorján

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H: 2582/2006. ügyszám
Alulírott közjegyző tanusítom, hogy ezt a nyilatkozatot Adorjan Istvan ----
(Calugareni/Románia, 1959.12.20.)
alatti lakos aki személyazonosságát
előttem saját kezűleg írta alá.----------
Budapest, 2006. Kettőezer-hatodik évi július hó 17. Tizenhetedik napján.-

DR. MEGYERI ZSUZSANNA KÖZJEGYZŐ

doktor Megyeri Zsuzsanna
budapesti közjegyző

2.1.3. Four notarial statements of 16 August 2006

ELSŐ NYILATKOZAT — FIRST STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), AZ ALAPVETŐ FIZIKAI INTERAKCIÓK ÉS ERŐK KLASSZIKUS INDUKTÍV ÁLTALÁNOS TÖRVÉNYE című fizikai elméletemmel kapcsolatos szerzői jogaim védelme céljából négy nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my physical theory entitled A CLASSICAL INDUCTIVE GENERAL LAW OF THE FUNDAMENTAL PHYSICAL INTERACTIONS AND FORCES I present four statements to the notary public for its being certainly dated:

I further developed my physical theory entitled A unification of the radial static electric and gravitational forces between 18 July and 14 August, 2006. The content of the first part of the modified text parts is the following: =

A CLASSICAL INDUCTIVE GENERAL LAW OF THE FUNDAMENTAL PHYSICAL INTERACTIONS AND FORCES / (/ = new paragraph) A) Interaction concepts and laws / Be X and Y two spherical bodies with the rays r_X and r_Y, respectively, having symmetrical charge and, respectively, mass distributions, at the distance d from each other, in a common system of co-ordinates, with the velocities v_X and v_Y, respectively, considerably smaller than the velocity of the light, which produce around themselves the gravitational-, electric- and, respectively, magnetic field fluxes Φ_{XG} and Φ_{YG}, Φ_{XE} and Φ_{YE}, and, respectively, Φ_{XM} and Φ_{YM}. / 1) The gravitational, electric and magnetic specific fluxes ~ (~ = unchanged text) $\Phi_{XM} = \mu_0 q_X v_X \sin\theta$ (5), $\Phi_{YM} = \mu_0 q_Y v_Y \sin\omega$ (6) [From the law of Biot and Savart.] , / in which: γ_0 — the specific flux in vacuum of the gravitational field, [N m^2 / kg^2] ~ μ_0 — the magnetic permeability of the vacuum, [Wb s / C m], / θ and ω — the angles formed by the straight line linking the centers of X and Y with v_X and v_Y, respectively. / 2) The gravitational, electric and magnetic interaction flux ~ $\Phi_{XM}^* = \Phi_{XM} S_X^* / 4\pi d^2$ (11), $\Phi_{YM}^* = \Phi_{YM} S_Y^* / 4\pi d^2$ (12) ~ in which: ~ Φ_{XM}^* — the magnetic interaction flux of X, [Wb], / Φ_{YM}^* — the magnetic interaction flux of Y, [Wb] ~ Φ_{XM} and Φ_{YM} — the magnetic fluxes of X and Y, respectively, [Wb] ~ On the basis of (1) - (14): ~ $\Phi_{XM}^* = \mu_0 q_X v_X r_Y^2 \sin\theta / 4 d^2$ (19), $\Phi_{YM}^* = \mu_0 q_Y v_Y r_X^2 \sin\omega / 4 d^2$ (20) ~ 3) The gravitational, electric and magnetic interaction specific surface ~ $F_{XM} = \sigma_{XM} \Phi_{XM}^*$ (37) $F_{YM} = \sigma_{YM} \Phi_{YM}^*$ (38), / in which: F_{XG}, F_{XE} and F_{XM} — the gravitational, electric and, respectively, magnetic forces exerted by X onto Y, [N] ~ σ_{XM} and σ_{YM} — the magnetic-force factors of X and Y, respectively, [C / m s]. ~ $F_{XM} = F_{YM} = F_M \Leftrightarrow \Phi_{XM}^* / \Phi_{YM}^* = \sigma_{YM} / \sigma_{XM}$ (41). ~ On the basis of ~ (41), (11), (12), (5) and (6): ~ $\Phi_{XM}^* / \Phi_{YM}^* = \sigma_{YM} / \sigma_{XM} = q_X v_X S_X^* \sin\theta / q_Y v_Y S_Y^* \sin\omega$ (44). ~ $\sigma_{XM} = q_Y v_Y \sin\omega / S_X^* = q_Y v_Y \sin\omega / \pi r_Y^2$ (49) $\sigma_{YM} = q_X v_X \sin\theta / S_Y^* = q_X v_X \sin\theta / \pi r_X^2$ (50). ~ $\Sigma_{XM}^* = 1 / \sigma_{XM} = \pi r_Y^2 / q_Y v_Y \sin\omega$ (55) $\Sigma_{YM}^* = 1 / \sigma_{YM} = \pi r_X^2 / q_X v_X \sin\theta$ (56), ~ in which: ~ Σ_{XM}^* and Σ_{YM}^* — the interaction specific surfaaces of F_{XM} and F_{YM}, respectively, [m^2 / kg]. ~ 4) The laws of the gravitational, electric and magnetic interactions / On the basis of (33) – (38), and, respectively, of (51) – (56): ~ $F_{XM} = \Phi_{XM}^* / \Sigma_{XM}^*$ (75) $F_{YM} = \Phi_{YM}^* / \Sigma_{YM}^*$ (76). / B) The generalization of the interaction concepts and laws ~ 1) The interaction flux ~ 2) The interaction specific surface ~ 3) The general law of the fundamental physical interactions ~ (The continuation in the Second Statement)

A radiális sztatikus elektronos és gravitációs erők egyesítése című fizikai elméletemet 2006. július 18. és augusztus 14 között továbbfejlesztettem. A módosított szövegrészek első részének tartalma a következő:

AZ ALAPVETŐ FIZIKAI INTERAKCIÓK ÉS ERŐK KLASSZIKUS INDUKTÍV ÁLTALÁNOS TÖRVÉNYE / A) Interakció-fogalmak és –törvények / Legyen X és Y két, gömb alakú, r_X, illetve r_Y sugarú, szimmetrikus töltés-, illetve tömegeloszlású, egymástól d távolságra közös koordináta-rendszerben a fény sebességénél jelentékenyen kisebb v_X, illetve v_Y sebességű test, amelyek a Φ_{XG} és Φ_{YG}, Φ_{XE} és Φ_{YE}, illetve a Φ_{XM} és Φ_{YM} gravitációs, elektromos, illetve mágneses mezőfluxusokat produkálják maguk körül. / 1) A gravitációs, elektromos és mágneses fajfluxus ~ amelyekben: γ_0 — a gravitációs mező vákuumbeli fajfluxusa, [N m^2 / kg^2], ~ μ_0 — a vákuum mágneses permeabilitása, [Wb s / C m] / θ és ω — az X és Y középpontjait összekötő egyenes és a v_X, illetve a v_Y által közrezárt szögek. / 2) A gravitációs, elektromos és mágneses interakció-fluxus ~ amelyekben: ~ Φ_{XM}^* — X mágnesesinterakció-fluxusa, [Wb], / Φ_{YM}^* — Y mágnesesinterakció-fluxusa, [Wb], ~ Φ_{XM} és Φ_{YM} — X, illetve Y mágneses fluxusai, [Wb], ~ 3) A gravitációs, elektromos és mágneses interakció-fajfelület ~ amelyekben: F_{XG}, F_{XE} és F_{XM} — az X által Y-ra kifejtett gravitációs, elektromos, illetve mágneses erők, [N], ~ Σ_{XM}^* és Σ_{YM}^* — F_{XM}, illetve F_{YM} interakció-fajfelületei, [m s / C]. ~ 4) A gravitációs, elektromos és mágneses interakciók törvényei ~ B) Az interakció-fogalmak és -törvények általánosítása ~ 1) Az interakció-fluxus ~ 2) Az interakció-fajfelület ~ 3) Az alapvető fizikai interakciók álalános törvénye ~ (Folytatása a Második Nyilatkozatban).

Dátum / Date: 2006. Augusztus 15. / August 15, 2006 Aláírás / Signature: Adorján

Dr. Halasi Lívia Közjegyzői Iroda
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1131. A. 2109/2006. ügyszám

----------**TANÚSÍTVÁNY** ----------

Alulírott doktor Szabó Mária Mónika közjegyzőhelyettes tanúsítom, hogy a túloldali 1(egy) lapból és 1(egy) oldalból álló ELSŐ NYILATKOZAT elnevezésű okiratot----------

— melynek sem tartalmáért, sem formájáért a közjegyzőt felelősség nem terheli — ----------

ADORJAN ISTVÁN ----------

(Calugareni, 1959. december 20.)----------

[redacted]

előttem saját kezűleg írta alá.----------

Kelt Budapesten, 2006. (kettőezer-hatodik) évi augusztus hó 16. (tizenhatodik) napján. --------

doktor Szabó Mária Mónika
közjegyzőhelyettes

DR. HALASI LÍVIA KÖZJEGYZŐ * 3 * BUDAPEST

MÁSODIK NYILATKOZAT — SECOND STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), AZ ALAPVETŐ FIZIKAI INTERAKCIÓK ÉS ERŐK KLASSZIKUS INDUKTÍV ÁLTALÁNOS TÖRVÉNYE című fizikai elméletemmel kapcsolatos szerzői jogaim védelme céljából négy nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my physical theory entitled A CLASSICAL INDUCTIVE GENERAL LAW OF THE FUNDAMENTAL PHYSICAL INTERACTIONS AND FORCES I present four statements to the notary public for its being certainly dated:

I further developed my physical theory entitled A unification of the radial static electric and gravitational forces between July 18 and August 14, 2006. The content of the second part of the modified text parts is the following: (Continuation from the First Statement) ~ C) Consequences ~ 1) The interpretation of the gravitational constant / On the basis of the law of Gauss: ~ On the basis of (96), (97), (5) and (6): / $G = \gamma_0 / 4 \pi$ (95). / 2) The interpretation of the electric permitivity constant / According to the law of Gauss: ~ On the basis of (93), (94),(1) and (2): / $\varepsilon_0 = 1 / \delta_0$ (98). / 3) The interpretation of the magnetic permeability constant / The magnetic permeability constant can be interpreted for the specific flux in vacuum of the magnetic field. / 4) The origination of the general law of the fundamental physical forces ~ 5) The origination of the law of Newton and the formularization of the gravitational specific flux ~ 6) The origination of the law of Coulomb and the formularization of the electric specific flux ~ 7) The origination of the law of the magnetic force / $\varphi_0 = \mu_0$ (112) $u_X = q_X v_X \sin \theta$ (113) $u_Y = q_Y v_Y \sin \omega$ (114). / On the basis of (99) and (112) – (114): / $F_M = \mu_0 q_X q_Y v_X v_Y \sin \theta \sin \omega / 4 \pi d^2$ (115), / in which: F_M — the magnetic force between X and Y, [N]. / 8) The effect of Newton's third law. In the case of the magnetic interaction the third law of Newton cannot vectorially be applied generally, because the angle between F_{XM} and F_{YM} regularly is smaller than 180 °. / 9) A hypothetical law of the strong force / Be X a neutron and Y a proton, which, by their q_{XS} and q_{YS} strong charges — according to the hypothesis of Yukawa — produce around themselves the pion-field fluxes Φ_{XS} and Φ_{YS}. The unit of measure of the strong charge may be the Yukawa, [Y]. The Yukawa may be defined for the strong-charge quantity of the nucleon. ~ $\varphi_0 = \sigma_0$ (116), $u_X = q_{XS} [(d - d_{mS})^a (d_{MS} - d)^b]^{1/2k} / D_{XS}^{(a+b)/2k}$ (117) $u_Y = q_{YS} [(d - d_{mS})^i (d_{MS} - d)^n]^{1/2k} / D_{YS}^{(i+n)/2k}$ (118), $D_{XS} = (a d_{MS} + b d_{mS}) / (a + b)$ (119) $D_{YS} = (i d_{MS} + n d_{mS}) / (i + n)$ (120), / in which: σ_0 — the specific flux of the strong field, [N m^2 / Y], / d_{mS} — the minimum strong-interaction distance between X and Y, [m], / d_{MS} — the maximum strong-interaction distance between X and Y, [m], / D_{XS} and D_{YS} — the maximum strong-flux distances of X and Y, respectively, [m], / a, b,i, k and n — nonzero natural numbers. / On the basis of (85), (86), (116)– (118), (27) and (28): / $\Phi_{XS}^* = \sigma_0 q_{XS} [(d - d_{mS})^a (d_{MS} - d)^b]^{1/2k} [1 - (1 - r_Y^2 / d^2)^{1/2}] / 2 D_{XS}^{(a+b)/2k}$ (121), / $\Phi_{YS}^* = \sigma_0 q_{YS} [(d - d_{mS})^i (d_{MS} - d)^n]^{1/2k} [1 - (1 - r_X^2 / d^2)^{1/2}] / 2 D_{YS}^{(i+n)/2k}$ (122), / (The continuation in the Third Statement)

A radiális sztatikus elektronos és gravitációs erők egyesítése című fizikai elméletemet 2006. július 18. és augusztus 14 között továbbfejlesztettem. A módosított szövegrészek második részének tartalma a következő: (Folytatás az Első Nyilatkozatból) ~ C) Következmények / 1) A gravitációs állandó értelmezése / A Gauss törvénye alapján: ~ 2) Az elektromos permitivitási állandó értelmezése / A Gauss törvénye szerint: ~ 3) A mágneses permeabilitási állandó értelmezése / A mágneses permeabilitási állandó a mágneses mező vákuumbeli fajfluxusaként értelmezhető. / 4) Az alapvető fizikai erők álalános törvényének eredeztetése ~ 5) Newton törvényének eredeztetése és a gravitációs fajfluxus formalizációja ~ 6) Coulomb törvényének eredeztetése és az elektromos fajfluxus formalizációja ~ 7) A mágneses erő törvényének eredeztetése ~ F_M — az X és Y közötti mágneses erő, [N]. / 8) Newton harmadik törvényének hatálya. X és Y mágneses interakciója esetében Newton harmadik törvénye vektoriálisan általában nem alkalmazható, mivel az F_{XM} és F_{YM} közötti szög rendszerint kisebb mint 180 °. / 9) Az erős erő hipotetikus törvénye / Legyen X egy neutron és Y egy proton, amelyek q_{XS} és q_{YS} erős töltéseik révén — Yukawa hipotézisének megfelelően — a Φ_{XS} és Φ_{YS} pionmező-fluxusokat produkálják maguk körül. Az erős töltés mértékegysége a Yukawa, [Y] lehet. A Yukawa a nukleon erőstöltés-mennyiségeként határozható meg. ~ amelyekben: σ_0 — az erős mező fajfluxusa, [N m^2 / Y], / d_{mS} — az X és Y közötti minimális erősinterakció-távolság, [m], / d_{MS} — az X és Y közötti maximális erősinterakció-távolság, [m], / D_{XS} és D_{YS} — X és Y maximális erősfluxus-távolságai, [m], / a, b, i, k és n — nemnulla természetes számok. ~ (Folytatása a Harmadik Nyilatkozatban).

Dátum / Date: 2006. Augusztus 15. / August 15, 2006 Aláírás / Signature: Adorján

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1131. A. 2110/2006. ügyszám

----------**TANÚSÍTVÁNY** ----------

Alulírott doktor Szabó Mária Mónika közjegyzőhelyettes tanúsítom, hogy a túloldali 1(egy) lapból és 1(egy) oldalból álló MÁSODIK NYILATKOZAT elnevezésű okiratot----------

— melynek sem tartalmáért, sem formájáért a közjegyzőt felelősség nem terheli — ----------

ADORJAN ISTVÁN ----------

(Calugareni, 1959. december 20.) ----------

[redacted]

előttem saját kezűleg írta alá.----------

Kelt Budapesten, 2006. (kettőezer-hatodik) évi augusztus hó 16. (tizenhatodik) napján. --------

doktor Szabó Mária Mónika
közjegyzőhelyettes

HARMADIK NYILATKOZAT — THIRD STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), AZ ALAPVETŐ FIZIKAI INTERAKCIÓK ÉS ERŐK KLASSZIKUS INDUKTÍV ÁLTALÁNOS TÖRVÉNYE című fizikai elméletemmel kapcsolatos szerzői jogaim védelme céljából négy nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my physical theory entitled A CLASSICAL INDUCTIVE GENERAL LAW OF THE FUNDAMENTAL PHYSICAL INTERACTIONS AND FORCES I present four statements to the notary public for its being certainly dated:

I further developed my physical theory entitled A unification of the radial static electric and gravitational forces between July 18 and August 14, 2006. The content of the third part of the modified text parts is the following: = (Continuation from the Second Statement): / in which: Φ_{XS}^* and Φ_{YS}^* — the strong-interaction flux of X and Y, respectively, [N m^2 / Y], / On the basis of (89), (90), (117) and (118): / / $\Sigma_{XS}^* = 2\,\pi\,r_Y^2\,D_{YS}^{(i+n)/2k} / q_{YS}\,[(d - d_{mS})^i\,(d_{MS} - d)^n]^{1/2k}\,[1 + (1 - r_Y^2 / d^2)^{1/2}]$ (123), $\Sigma_{YS}^* = 2\,\pi\,r_X^2\,D_{XS}^{(a+b)/2k} / q_{XS}\,[(d - d_{mS})^a\,(d_{MS} - d)^b]^{1/2k}\,[1 + (1 - r_X^2 / d^2)^{1/2}]$ / On the basis of (91) and (92): / $F_{XS} = \Phi_{XS}^* / \Sigma_{XS}^*$ (125) $F_{YS} = \Phi_{YS}^* / \Sigma_{YS}^*$ (126), / in which: F_{XS} — the strong force exerted by X onto Y, [N], / F_{YS} — the strong force exerted by Y onto X, [N]. / On the basis of (125), (126) and (121) — (124), as well as of (99) and (116) — (118): / $F_{XS} = F_{YS} = F_S = \sigma_0\,q_{XS}\,q_{YS}\,[(d - d_{mS})^{a+i}\,(d_{MS} - d)^{b+n}]^{1/k} / 4\,\pi\,d^2\,D_{XS}^{(a+b)/2k}\,D_{YS}^{(i+n)/2k}$ (127), / in which: F_S — the strong force between X and Y, [N]. (124), / in which: Σ_{XS}^* and Σ_{YS}^* — the interaction specific surfaces of F_{XS} and F_{YS}, respectively, [m^2 / Y]. / 10) <u>The "weak deuteron" and the weak force</u> / Be X a neutron and Y a proton, which, by their weak charges, produce around themselves a field of electrons and anti-neutrinos. If: / $d_{mW} \le d \le d_{MW}$, (128), / in which: d_{mW} — the minimum weak-interaction distance between X and Y, [m], / d_{MW} — the maximum weak-interaction distance between X and Y, [m], / a weak interaction exists between the neutron and the proton, which may be termed "weak deuteron". From the indeterminancy principle of Heisenberg: / $d_{aW} \approx h / 2\,\pi\,m_{0e}\,c \approx 100\,d_{aS}$ (129), / in which: d_{aW} and d_{aS} — the action distances of the weak and, respectively, the strong fields, [m], / h — the constant of Planck, [J s], / m_{0e} — the rest mass of the electron, [kg], / c — the velocity of the light, [m / s]. / Deuteron: n–(π^-)–p (130), / "weak deuteron": n–(e^-,ν')–p (131), / π disintegration of the neutron: $n \rightarrow p + \pi^-$ (132), / β disintegration of the neutron: $n \rightarrow p + e^- + \nu'$ (133). /While in case of the deuteron the π disintegration of the neutron is virtual, in case of the "weak deuteron", the "weak deuteron" itself is virtual. Consequently, the β disintegration of the neutron can be interpreted for such a process, a virtual inter-state of which is the weak interaction between the disintegrating neutrons and the formed protons: / $n \rightarrow [n–(e^-,\nu')–p] \rightarrow n \rightarrow p + e^- + \nu'$ (134). / The "weak deuteron" may be comprehended for such a virtual state of equilibrium, which is characterized by the equilibrium of the leptons exchanged by the neutron and the proton. Depending on the nature of the "exchanged" leptons, there are four kinds of "weak deuterons": / (The continuation in the Fourth Statement).

A radiális sztatikus elektronos és gravitációs erők egyesítése című fizikai elméletemet 2006. július 18. és augusztus 14 között továbbfejlesztettem. A módosított szövegrészek harmadik részének tartalma a következő: (Folytatás a Második Nyilatkozatból): ~ Φ_{XS}^* és Φ_{YS}^* — X, illetve Y erősinterakció-fluxusa, [N m^2 ~ Σ_{XS}^* és Σ_{YS}^* — F_{XS} és F_{YS}, interakció-fajfelületei, [m^2 / Y] ~ F_{XS} — az X által Y-ra gyakorolt erős erő, [N], / F_{YS} — az Y által X-re gyakorolt erős erő, [N].~ F_S — az X és Y közötti erős erő, [N]. ~ 10) <u>A „gyenge deuteron" és a gyenge erő</u> / Legyen X egy neutron és Y egy proton, amelyek gyenge töltéseik révén elektron-antineutrínó mezőt produkálnak maguk körül. Ha: ~ d_{mW} — az X és Y közötti minimális gyeengeinterakció-távolság, [m], / d_{MW} — az X és Y közötti maximális gyeengeinterakció-távolság, [m], / a neutron és a proton között gyenge interakció áll fenn, amely „gyenge deuteron"-nak nevezhető. Heisenberg határozatlansági elvéből ~ d_{aW} és d_{aS} — a gyenge, illetve az erős mezők hatótávolsága, [m], / h — Planck állandója, [J s], / m_{0e} — az elektron nyugalmi tömege, [kg], / c — a fény sebessége, [m / s]. / Deuteron: ~ „gyenge deuteron": ~ a neutron π-dezintegrációja: ~ a neutron beta-dezintegrációja: ~ Míg a deuteron esetében a neutron π-dezintegrációja virtuális, a „gyenge deuteron" esetében maga a „gyenge deuteron" virtuális. Következésképpen a neutron beta-dezintegrációja egy olyan folyamatként értelmezhető, amelynek egy virtuális köztes állapota a dezintegrálódó neutronok és a keletkezett protonok közötti gyenge interakció: ~ A „gyenge deuteron" olyan virtuális egyensúlyállapotként is felfogható, amelyet a neutron és a proton által kicserélt leptonok egyensúlya jellemez. A „kicserélt" leptonok természetétől függően négyfajta „gyenge deuteron" létezik: / (Folytatása a Negyedik Nyilatkozatban).

<u>Dátum / Date</u>: 2006. Augusztus 15. / August 15, 2006 <u>Aláírás / Signature</u>: Adorján

Dr. Halasi Lívia Közjegyzői Iroda
1105 Bp., Szt. László tér 7–14.
Tel.: 260-09-02; Fax: 433-28-03

1131. A. 2111/2006. ügyszám

----------**TANÚSÍTVÁNY** ----------

Alulírott doktor Szabó Mária Mónika közjegyzőhelyettes tanúsítom, hogy a túloldali 1(egy) lapból és 1(egy) oldalból álló HARMADIK NYILATKOZAT elnevezésű okiratot----------
— melynek sem tartalmáért, sem formájáért a közjegyzőt felelősség nem terheli — ----------
ADORJAN ISTVÁN ----------
(Calugareni, 1959. december 20.) ----------

[redacted]

előttem saját kezűleg írta alá. ----------
Kelt Budapesten, 2006. (kettőezer-hatodik) évi augusztus hó 16. (tizenhatodik) napján. --------

doktor Szabó Mária Mónika
közjegyzőhelyettes

NEGYEDIK NYILATKOZAT — FOURTH STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), AZ ALAPVETŐ FIZIKAI INTERAKCIÓK ÉS ERŐK KLASSZIKUS INDUKTÍV ÁLTALÁNOS TÖRVÉNYE című fizikai elméletemmel kapcsolatos szerzői jogaim védelme céljából négy nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my physical theory entitled A CLASSICAL INDUCTIVE GENERAL LAW OF THE FUNDAMENTAL PHYSICAL INTERACTIONS AND FORCES I present four statements to the notary public for its being certainly dated:

I further developed my physical theory entitled A unification of the radial static electric and gravitational forces between July 18 and August 14, 2006. The content of the fourth part of the modified text parts is the following: (Continuation from the Third Statement): the "weak deuterons" of the β^- disintegration, of the β^+ disintegration, of the electron capture and of the " positron capture": / β^- disintegration: $n \rightleftarrows p + e^- + \nu'$, namely $n\text{–}(e^-,\nu')\text{–}p$ (135), / / β^+ disintegration: $n + e^+ + \nu$, namely $n\text{–}(e^+,\nu)\text{–}p$ (136), / electron capture: $p + e^- \rightleftarrows n + \nu$, namely $n\text{–}(e^-,\nu)\text{–}p$ (137), / "positron capture": $n + e^+ \rightleftarrows p + \nu'$, namely $n\text{–}(e^+,\nu')\text{–}p$ (138). / As $m_{0e} \sim m_{0\pi}$, the law of the weak force formally corresponds to the law of the strong force: / $F_W = \omega_0\, q_{XW}\, q_{YW}\, [(d - d_{mW})^{a+i}\, (d_{MW} - d)^{b+n}]^{1/k} / 4\,\pi\, d^2\, D_{XW}^{(a+b)/2k}\, D_{YW}^{(i+n)/2k}$ (139), / in which: F_W — the weak force between X and Y, [N], / ω_0 — the specific flux of the weak field, [N m^2 / U], / q_{XW} and q_{YW} — the weak charges of X and Y, respectively, [U], D_{XW} and D_{YW} — the maximun weak-flux distances of X and Y, respectively, [m]. / 11) The analogy of the fundamental physical interactions with the chemical covalent bond / It is characteristic the mutual analogy between the fundamental physical interactions and the chemical covalent bond. According to this the covalent bond is constituted by the "electron field" formed by the electrons of the exterior shells of the chemically interacting parts: / hydrogen: $p\text{–}(e^-)\text{–}p$ (140). / The interacting parts of the fundamental physical interactions are linked by "field-quanta bonds": / deuteron: $n\text{—}p$ (141). / For instance the "weak deuteron" can be compared with the NaCl "molecule": / $Na + \frac{1}{2}\, Cl_2 \rightarrow [\, Na\text{—}Cl \rightleftarrows Na^+ + Cl^-\,] \rightarrow Na^+ + Cl^-$ (142). / 12) The interpretation of the mass / The mass can be interpreted for the gravitational charge of the bodies. / 13) The concept of the fundamental physical interaction / The fundamental physical interaction is that reciprocal action onto each other of two bodies, which they exert by the interaction fluxes of the fields produced by their charges onto the interaction specific surfaces of each other. This reciprocal action is expressed by the fundamental physical forces constituted by the ratios of the interaction fluxes and interaction specific surfaces. The fundamental physical interaction may be marked as follows: / $X\text{–}(\kappa)\text{–}Y$ (143), / in which : X and Y — the interacting parts, / κ — the quantum of the interaction-field.

A radiális sztatikus elektronos és gravitációs erők egyesítése című fizikai elméletemet 2006. július 18. és augusztus 14 között továbbfejlesztettem. A módosított szövegrészek negyedik részének tartalma a következő: (Folytatás a Harmadik Nyilatkozatból): / a β^--dezintegráció, β^+ dezintegráció, az elektronbefogás és a „pozitronbefogás" „gyenge deuteron"-jai: ~ ~ Mivel $m_{0e} \sim m_{0\pi}$, a gyenge erő törvénye formailag megegyezik az erős erő törvényével: ~ F_W — az X és Y közötti gyenge erő, [N], / ω_0 — a gyenge mező fajfluxusa, [N m^2 / U], / q_{XW} and q_{YW} — X, illetve Y gyenge töltései, [U] , / D_{XW} és D_{YW} — X és Y gyengefluxus-távolságai, [m]. / 11) Az alapvető fizikai interakcióknak a kémiai kovalens kötéssel való analógiája / Jellemző az alapvető fizikai interakciók és a kémiai kovalens kötés közötti kölcsönös analógia. Eszerint a kovalens kötést a kémiailag interaktáló felek külső héjainak elektronjai alkotta „elektronmező" képezi: / hidrogén: ~ Az alapvető fizikai interakciók interaktáló feleit „mezőkvantum-kötések" kötik össze: / deuteron: ~ A „gyenge deuteron" például a NaCl „molekulához" hasonlítható: ~ 12) A tömeg értelmezése / A tömeg a testek gravitációs töltéseként értelmezhető. / 13) Az alapvető fizikai interakció fogalma / Az alapvető fizikai interakció két testnek az az egymásra való kölcsönös hatása, amelyet a töltéseik produkálta mezők interakció-fluxusai által gyakorolnak egymás interakció-fajfelületeire. Ezt a kölcsönös hatást az interakció-fluxusaik és az interakció-fajfelületeik arányai képezte kvantuma. alapvető fizikai erők fejezik ki. Az alapvető fizikai interakció a következőképpen jelölhető: ~ κ — az interakciómező

Dátum / Date: 2006. Augusztus 15. / August 15, 2006 Aláírás / Signature: Adorján

Dr. Halasi Lívia Közjegyzői Iroda
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1131. A. 2112/2006. ügyszám

----------**TANÚSÍTVÁNY** ----------

Alulírott doktor Szabó Mária Mónika közjegyzőhelyettes tanúsítom, hogy a túloldali 1(egy) lapból és 1(egy) oldalból álló NEGYEDIK NYILATKOZAT elnevezésű okiratot----------
— melynek sem tartalmáért, sem formájáért a közjegyzőt felelősség nem terheli — ----------
ADORJAN ISTVÁN ----------
(Calugareni, 1959. december 20.,) ----------
[redacted] ----------

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előttem saját kezűleg írta alá.----------
Kelt Budapesten, 2006. (kettőezer-hatodik) évi augusztus hó 16. (tizenhatodik) napján. --------

doktor Szabó Mária Mónika
közjegyzőhelyettes

2.1.4. Seven notarial statements of 26 October 2006

FIRST STATEMENT

==========

The undersigned István Adorján, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright of my physical theory entitled CLASSICAL GENERAL LAWS OF THE FIELD-MEDIATED INTERACTIONS AND FORCES I present six statements to the notary public for their being certainly dated:==========

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The content of the first part of my theiry entitled Classical general laws of the field-mediated interactions and forces, representing the further development of my former theory entitled Classical inductive general law of the fundamental physical interactions and forces, is thefollowing:==========

CLASSICAL GENERAL LAWS OF THE FIELD-MEDIATED INTERACTIONS AND FORCES / Physics needs general theories. Those unify, order and systematize the extant knowledge, raise to a higher level their comprehension, make them more manageable and last but not least make possible the obtaining of new knowledge. Their vulnerability resulting from their high level of generality stimulates the discovery of new facts aiming their verification, what helps the development and the strengthening of physics. / I) Classical inductive general law of the field-mediated forces / In the sense of this study, the field-mediated forces (further on "forces" for short) are the forces acting between two field sources, separated from each other and not being in immediate touch with each other, by the implication of the fields produced by them. The unification of the forces is one of the problems of the present physics. The facts of the theoretical course needed for this are laws exhaustively verified experimentally. Accordingly, the scope of the intellect is rather large. / 1) The inductive unification of the gravitational, electric and magnetic classical force laws / Be X and Y two spherical bodies, with the radii r_X and r_Y, respectively, with symmetrical mass and, respectively, charge distributions, being in motion at the distance d from each other, in a common system of co-ordinates, parallel with each other, on straight lines, at the velocities v_X and, v_Y, respectively, considerably smaller than the velocity of the light. The expressions of the gravitational electric and magnetic forces acting between X and Y can be written on the basis of the laws of Newton, Coulomb and, respectively, Laplace, Lorentz, Biot and Savart: / $F_G = G (m_X m_Y / d^2)$ (1), / $F_E = (1 / 4 \pi \varepsilon_0) (q_X q_Y / d^2)$ (2), / $F_M = (\mu_0 / 4 \pi) (q_X q_Y v_X v_Y \sin \theta \sin \omega / d^2)$ (3), / in which: F_G, F_E and F_M — the gravitational, electric and, respectively, magnetic forces between X and Y, [N], G — the constant of Newton, [$N m^2 / kg^2$], ε_0 — the electric permitivity constant, [$C^2 / N m^2$]. μ_0 — the magnetic permeability of the vacuum, [Wb s / C m], m_X and m_Y — the masses of X and Y, respectively, [kg], q_X and q_Y — the electric charges of X and Y, respectively, [C], θ and ω — the angles formed by the straight line linking the centers of X and Y with v_X and v_Y, respectively. / It can be ascertained that: / 1) the structure of the expression of each law of field-mediated force (further on "force law" for short) consists of a constant and a variable element; / 2) the variable structural element of each force law has two sub-elements: one is the product of the variable physical quantities characterizing the particular field sources of X and Y, the other is the d^2; / 3) the expressions of the the force laws are structurally roughly identical; they differ from each other only in their constant structural element: namely the expression of the constant of Newton does not contain the product 4 π and the electric permitivity constant is in the denominator. / On the basis of the law of Gauss, as well as of Biot and Savart the gravitational, electric and, respectively, magnetic fluxes Φ_{XG} and Φ_{YG}, Φ_{XE} and Φ_{YE}, and, respectively, Φ_{XM} and Φ_{YM} of X and Y: $\Phi_{XG} = 4 \pi G m_X$ (4) and $\Phi_{YG} = 4 \pi G m_Y$ (5), / $\Phi_{XE} = q_X / \varepsilon_0$ (6) and $\Phi_{YE} = q_Y / \varepsilon_0$ (7), / $\Phi_{XM} = \mu_0 q_X v_X \sin \theta$ (8) and $\Phi_{YM} = \mu_0 q_Y v_Y \sin \omega$ (9). / On the basis of (1) - (9): / $F_G = \Phi_{XG} (m_Y / 4 \pi d^2) = \Phi_{YG} (m_X / 4 \pi d^2)$ (10), / $F_E = \Phi_{XE} (q_Y / 4 \pi d^2) = \Phi_{YE} (q_X / 4 \pi d^2)$ (11), / $F_M = \Phi_{XM} (q_Y v_Y \sin \omega / 4 \pi d^2) = \Phi_{YM} (q_X v_X \sin \theta / 4 \pi d^2)$ (12), / It can be ascertained that: / 1) carrying a flux in each of the expressions of the force laws makes them structurally completely identical; / 2) the product 4 π and the d^2 belong together; the product 4 πd^2 is a structural element of the expressions of the force laws; / 3) the causes of the structural differences existing in the original expressions of the force laws must exclusively be looked for in the expressions of the fluxes; / 4) in the case of the magnetic flux, not only the electric charge, but also the velocity and the sine of the relative motional angle are variable physical quantities characterizing the magnetic field source, because for ceasing the magnetic flux, ceasing the velocity or the relative motional angle of the body are enough; / 5) the fluxes exclusively depend on the variable physical quantities characterizing the field sources; / 6) $m_X = m_Y = 1$ kg $\Leftrightarrow$ $\Phi_{XG} = \Phi_{YG} = 4 \pi G$ $N m^2 / kg$ (13), / $q_X = q_Y = 1$ C $\Leftrightarrow$ $\Phi_{XE} = \Phi_{YE} = 1 / \varepsilon_0$ $N m^2 / C$ (14), / ($v_X = v_Y = 1$ m / s and $\sin \theta = \sin \omega = 1$) $\Leftrightarrow$ $\Phi_{XM} = \Phi_{YM} = \mu_0$ Wb (15). / 7) the 4 π G, the $1 / \varepsilon_0$ and the μ_0 can be considered gravitational, electric and, respectively, magnetic spedific fluxes; / The specific flux is the flux produced by the individual and the joint of the variable physical quantities characterizing the field source. / (Continuation in the Second Statement).==========

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Date: October 26, 2006.

Signature: Adorján

DR. WALKSHÖFER KATALIN
BUDAPESTI KÖZJEGYZŐ
1065 Bp., Bajcsy-Zsilinszky út 65.II. em. 3.
Telefon/Fax: 332-2259

Tanúsítvány:
Ügyszám: 4501 /2006.

Tanúsítom, hogy **Adorjan Istvan** (Calugareni, 1959. december 20., anyja neve kijelentése

előttem saját kezűleg írta alá. ----------
Ez a tanúsítvány az okiratokon lévő aláírások valódiságát tanúsítja. ----------
Kelt Budapesten, 2006. kettőezer-hatodik év október hó 26. huszonhatodik napján. ----------

dr Walkshöfer Katalin

doktor Walkshőfer Katalin
budapesti közjegyző

BUDAPEST
DR. WALKSHÖFER KATALIN
közjegyző

SECOND STATEMENT

==========

The undersigned István Adorján, born on December 20, 1959 in Cãlugãreni, Romania, with a view to protect the copyright of my physical theory entitled CLASSICAL GENERAL LAWS OF THE FIELD-MEDIATED INTERACTIONS AND FORCES I present six statements to the notary public for their being certainly dated:==========

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The content of the second part of my theiry entitled Classical general laws of the field-mediated interactions and forces, representing the further development of my former theory entitled Classical inductive general law of the fundamental physical interactions and forces, is thefollowing:==========

(Continuation of the First Statement) Conforming to this definition, μ_0 can be considered the magnetic flux which is produced by a body with a charge of 1 C and a velocity of 1 m / s perpendicular to its motional direction. / The concept of specific flux is of theoretical character though, but it proceeds from a domain exhaustively checked experimentally and results from the field theory generally accepted at present. At the same time it provides a clear and unified interpretation for the force constants. / $\gamma_0 = 4 \pi G$ (16) and $\delta_0 = 1 / \varepsilon_0$ (17), / in which: γ_0 — the specific flux in vacuum of the gravitational field, [N m^2 / kg^2], δ_0 — the specific flux in vacuum of the electric field, [N m^2 / C^2]. / On the basis of (1), (2), (16) and (17): $F_E = \delta_0 (q_X q_Y / 4 \pi d^2)$ (19), / $F_M = \mu_0 (q_X q_Y v_X v_Y \sin\theta \sin\omega / 4 \pi d^2)$ (3), / It can be ascertained that: 1) a complete structural identity exists on the one hand between the expressions of the gravitational, electric and magnetic force laws, and, on the other between the units of measure of the force constants; / 2) exclusively the particularity of their field sources differentiate on the one hand the expressions of the gravitational, electric and magnetic force laws, and, on the other, the units of measure of the force constants. / The unified structure of the field-mediated forces: (field source X)—(field)—(field source Y), and the unified expression of their laws: $F = \varphi_0 u_X u_Y / 4 \pi d^2$ (21), in which: F — the force acting between X and Y, [N], φ_0 — the specific flux of the field, [N m^2 / U^2], u_X and u_Y — the field sources of X and Y, respectively, [U]. / 2) The generalization of the unified expressions of the force laws / The expression (21) reflects the structural unity of the gravitational, electric and magnetic forces. At present, it can be considered a fact theoretically relatively grounded and experimentally relatively verified that the structure of the strong force also coincide with the structure of the field-mediated forces. This is supported by the following arguments as well: 1) numerous experimental facts refer to that the strong force is mediated by a pion field; 2) to each known field-mediated force, an organization level of the matter can be assigned, in which it attains to a determinant role: the gravitational one on the cosmic one, the electromagnetic one on the atomic one and the strong force plays a determinant role on the nuclear organization level; 3) each known field-mediated force attains to a determinant role on the organization level characteristic to it so that it is much stronger than the field-mediated force determining the material organization level preceding from above: thus the electromagnetic force on the atomic level is much stronger than the gravitational force and on the nuclear level the strong force is much stronger than the electromagnetic force. / On the basis of the above, the effect of the expression (21) can be extended to the strong force and — as according to the present knowledge another kind of field-mediated force does not exist — it can be generalized as well. For this reason, the expression (21) can be considered a classical inductive general law of the field-mediated forces (further on "general force law" for short). / 3) Corroborations / 3.1) The deduction of the gravitational law of Newton / $\varphi_0 = \gamma_0$ (22), $u_X = m_X$ (23) and $u_Y = m_Y$ (24). / On the basis of (21), (22)-(24) and (16) the gravitational law of Newton can be deducted. / 3.2) The deduction of the law of Coulomb / $\varphi_0 = \delta_0$ (25), $u_X = q_X$ (26) and $u_Y = q_Y$ (27). / On the basis of (21), (25)-(27) and (17) the law of Coulomb can be deducted. / 3.3) The deduction of the magnetic-force law / $\varphi_0 = \mu_0$ (28), $u_X = q_X v_X \sin\theta$ (29) and $u_Y = q_Y v_Y \sin\omega$ (30). / On the basis of (21), (28)-(30) the magnetic-force law can be deducted. / 4) Consequences / From the general force law the specific force laws can be deducted. / 4.1) The general law of the flux / It can be seen from (10)-(12) that as parts of the expressions of the force laws, the gravitational, electric and the magnetic fluxes can also be generalized. On the basis of (10), (11), (18) and (19:) $\Phi_{XG} = \gamma_0 m_X$ (31) and $\Phi_{YG} = \gamma_0 m_Y$ (32), / $\Phi_{XE} = \delta_0 q_X$ (33) and $\Phi_{YE} = \delta_0 q_Y$ (34). / On the basis of (31)-(34), (8), (9) and (21): $\Phi_X = \varphi_0 u_X$ (35) and $\Phi_Y = \varphi_0 u_Y$ (36), in which: Φ_X and Φ_Y — the fluxes of the fields of X and Y, respectively, [N m^2 / U]. / 4.2) The strong field. The force acting between the strong sources is mediated by the strong field. This consequence corroborates the hypothesis of Yukawa referring to the pion field. / 4.3) The generalization of the concept of the charge. The field source of the strong force may be termed "strong charge". (Continuation in the Third Statement).==========

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Date: October 26, 2006.

Signature: Adorján

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Tanúsítvány:
Ügyszám: 4500 /2006.

Tanúsítom, hogy **Adorian Istvan** (Calugareni, 1959. december 20., anyja neve kijelentése

előttem saját kezűleg írta alá. ----------
Ez a tanúsítvány az okiratokon lévő aláírások valódiságát tanúsítja. ----------
Kelt Budapesten, 2006. kettőezer-hatodik év október hó 26. huszonhatodik napján. ----------

dr Walkshöfer Katalin

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DR. WALKSHÖFER KATALIN
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THIRD STATEMENT

The undersigned István Adorján, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright of my physical theory entitled CLASSICAL GENERAL LAWS OF THE FIELD-MEDIATED INTERACTIONS AND FORCES, I present six statements to the notary public for their being certainly dated:

The content of the third part of my theiry entitled Classical general laws of the field-mediated interactions and forces, representing the further development of my former theory entitled Classical inductive general law of the fundamental physical interactions and forces, is thefollowing:

(Continuation of the Second Statement) Similarly to the electric and strong charges, the mass can be physically interpreted as the gravitational charge. On the basis of this: $m_X = q_{XG}$ (37) and $m_Y = q_{YG}$ (38), in which: q_{XG} and q_{YG} — the gravitational charges of X and Y, respectively, [kg], / $q_X = q_{XE}$ (39) and $q_Y = q_{YE}$ (40). / 4.4) The structure of the strong force. The strong force is structurally identical with the gravitational, electric and magnetic forces. Its structure is reflected by the expression (21): $F_S = \sigma_0 q_{XS} q_{YS} / 4 \pi d^2$) (41), in which: F_S — the strong force acting between X and Y, respectively, [N], σ_0 — the specific flux of the strong force, [N m^2 / U^2], q_{XS} and q_{YS} — the strong charges of X and Y, respectively, [U]. / 4.5) A classical hypothetic law of the strong force. Be X a neutron and Y a proton, which, by their q_{XS} and q_{YS} strong charges — according to the hypothesis of Yukawa — produce strong fields around themselves. The unit of measure of the strong charge may be the Yukawa, [Y]. The Yukawa may be defined for the strong-charge quantity of the nucleon. / $u_X = q_{XS} [(d - d_{mS})^a (d_{MS} - d)^b]^{1 / 2k} / D_{XS}^{(a + b) / 2k}$ (42), / $u_Y = q_{YS} [(d - d_{mS})^i (d_{MS} - d)^n]^{1 / 2k} / D_{YS}^{(i + n) / 2k}$ (43), / $D_{XS} = (a d_{MS} + b d_{mS}) / (a + b)$ (44) and $D_{YS} = (i d_{MS} + n d_{mS}) / (i + n)$ (45), in which: d_{mS} — the minimum radius of action of the strong force between X and Y, [m], d_{MS} — the maximum radius of action of the strong force between X and Y, [m], D_{XS} and D_{YS} — the distances of the maximum strong-flux of X and Y, respectively, [m], a, b,i, k and n — nonzero natural numbers. /On the basis of (41), (42) and (43): $F_S = \sigma_0 q_{XS} q_{YS} [(d - d_{mS})^{a+1} (d_{MS} - d)^{b+n}]^{1 / k} / 4 \pi d^2 D_{XS}^{(a + b) / 2k} D_{YS}^{(i + n) / 2k}$ (46). / 4.6) A hypothesis of the "weak" force. The forces mediated by the fields constituted by the electron or the positron with the neutrino or the anti-neutrino may be termed "weak" forces. For example, the nucleon can dispose of a "weak" field. / Be a neuron and a proton, which through their "weak" charges produce a "weak" field around themselves. From the indeterminancy principle of Heisenberg: $d_{aW} \approx h / 2 \pi m_{0e} c \approx 100 d_{aS}$ (47), in which: d_{aW} and d_{aS} — the radii of action of the "weak" and, respectively, the strong forces, [m], h — the constant of Planck, [J s], m_{0e} — the rest mass of the electron, [kg], c — the velocity of the light, [m / s]. / If $d \leq d_{aW}$, a "weak" force acts between the neutron and the proton. This system may be termed "weak deuteron". The "weak deuteron" may be comprehended for such a virtual state of equilibrium, which is characterized by the equilibrium of the leptons "exchanged" by the neutron and the proton. Depending on the nature of the "exchanged" leptons, there can be four kinds of "weak deuterons": $n \square p + e^- + \nu'$, namely $n–(e^-,\nu')–p$ (48), / $p \square n + e^+ + \nu$, namely $n–(e^+,\nu)–p$ (49), / $p + e^- \square n + \nu$, namely $n–(e^-,\nu)–p$ (50), / $n + e^+ \square p + \nu'$, namely $n–(e^+,\nu')–p$ (51). / 5) The physical interpretation of the general force law / A general law is expectable to lead to a higher level of the cognition and comprehension. Therefore the question arises that what cognitive results the general force law — namely the introduction of the concept of the specific flux and the discovery of the general character of the product $4 \pi d^2$ — in the field of the interpretation of the forces. / Already the expressions (1)-(3) of the force laws reflect the interaction nature of the field by containing double as products the variable physical quantities characterizing their particular field sources, namely their particular charges. Accordingly, in, the field-mediated interaction (further on "interaction" for short) of X and Y there are two forces: the first one, with which X acts onto Y, and the second one, with which Y acts onto X. For this reason, it is specially to be examined that how and to what extent the single expression of the general force law is fit to differentiate these two forces from each other. / With rearranging the physical quantities as well as on the basis of (35) and (36), the expression (21): $F= F_X = u_Y (\Phi_X / 4 \pi d^2) = u_Y I_X$ (52), $F= F_Y = u_X (\Phi_Y / 4 \pi d^2) = u_X I_Y$ (53), in which: F_X — the force exerted by X onto Y, [N], F_Y — the force exerted by Y onto X, [N], I_X — the intensity of the field of X at the distance d from it, [N / U], I_Y — the intensity of the field of Y at the distance d from it, [N / U]. / It can be ascertained hat: 1) the expressions (52) and (53) do not enrich the existing knowledge; for X and Y as bodies being in the fields of each other, on the basis of the present knowledge it can be written: $F_G = F_{XG} = m_Y g_X$ (54) and $F_G = F_{YG} = m_X g_Y$ (55), / $F_E = F_{XE} = q_{YE} E_X$ (56) and $F_E = F_{YE} = q_{XE} E_Y$ (57), /

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Date: October 21, 2006.

Signature: Adorján

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Tanúsítvány:
Ügyszám: 4499 /2006.

Tanúsítom, hogy **Adorjan Istvan** (Calugareni, 1959. december 20., anyja neve kijelentése

előttem saját kezűleg írta alá. ----------
Ez a tanúsítvány az okiratokon lévő aláírások valódiságát tanúsítja. ----------
Kelt Budapesten, 2006. kettőezer-hatodik év október hó 26. huszonhatodik napján. ----------

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DR. WALKSHÖFER KATALIN közjegyző BUDAPEST

FOURTH STATEMENT

==========

The undersigned István Adorján, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright of my physical theory entitled CLASSICAL GENERAL LAWS OF THE FIELD-MEDIATED INTERACTIONS AND FORCES I present six statements to the notary public for their being certainly dated:==========

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The content of the fourth part of my theiry entitled Classical general laws of the field-mediated interactions and forces, representing the further development of my former theory entitled Classical inductive general law of the fundamental physical interactions and forces, is thefollowing:==========

(Continuation of the Third Statement) $F_M = F_{XM} = q_{YE} v_Y B_X$ (58) and $F_M = F_{YM} = q_{XE} v_X B_Y$ (59), in which: F_{XG}, F_{XE} and F_{XM} — the gravitational, electric and magnetic forces exerted by X onto Y, respectively, [N], g_X and g_Y — the intensity of the gravitational field of X and Y at the distance d from them, [N / kg], E_X and E_Y — the intensity of the electric field of X and Y at the distance d from them, [N / C], B_X and B_Y — the intensity of the magnetic field of X and Y at the distance d from them, [N / A m]. 2) according to (52) and (53), the force acting between X and Y is the interaction between the field of a part and the charge of the other part; 3) u_X and u_Y, as well as I_X and I_Y are physical quantities independent of the interaction of X and Y, namely they are not physical quantities characteristic to interactions. Further, the expression (21) can still be written: $F = F_X = \Phi_X (u_Y / 4 \pi d^2)$ (60), / $F = F_Y = \Phi_Y (u_X / 4 \pi d^2)$ (61). / It can be ascertained that: 1) according to (60) and (61), the force acting between X and Y is the interaction between the flux of a part and the superficial charge density of the other part, calculated for the surface $4 \pi d^2$; 2) the flux of a part does not fall exclusively onto the surface of the other part, as well as the surface $4 \pi d^2$ is not the surface of the other part; 3) the expressions (52)-(61) do not express the spatiality of X and Y, as well as of their charges, they treat them as points; / Consequently, with the physical quantities available, the general force law is not capable of interpreting suitably the forces for reciprocal actions of the parts onto each other. For this, interaction-specific concepts and physical quantities are needed. / II) Classical deductive general law of the field-mediated interactions (further on "general interaction law" for short) / 1) The general concept of the interaction flux / The interaction flux is that portion of the flux of an interacting part, with which it acts onto the other part. a) $d >> r_X$ and r_Y / $\Phi_X^* = \Phi_X S_{Xa}^* / 4 \pi d^2$ (62) and $\Phi_Y^* = \Phi_Y S_{Ya}^* / 4 \pi d^2$ (63), in which: Φ_X^* and Φ_Y^* — the interaction fluxes of X and Y, respectively, [N m^2 / U], S_{Xa}^* and S_{Ya}^* — the interaction-flux surfaces of X and Y, respectively, in the case (a), [m^2]. / It can be ascertained that: 1) the expressions of the interaction fluxes bring to surface the physical signification and the role of the structural element $4 \pi d^2$ of the general force law: the product $4 \pi d^2$ denotes the surface of the sphere with the radius d and it is the denominator of the fraction which establishes that how big portions of the fluxes of X and Y, respectively, fall onto the surfaces of Y and X, respectively; 2) with the exception of the charge of the other part, the expression of the interaction flux of a part entirely covers the expression of the general force law with respect to the physical quantities. / $S_{Xa}^* = \pi r_Y^2$ (64) and $S_{Ya}^* = \pi r_X^2$ (65). / On the basis of (62), (35) and (64) and, respectively, of (63), (36) and (65): $\Phi_X^* = \varphi_0 u_X r_Y^2 / 4 d^2$ (66) and $\Phi_Y^* = \varphi_0 u_Y r_X^2 / 4 d^2$ (67). / b) $d \sim r_X$ and r_Y / $\Phi_X^* = \Phi_X S_{Xb}^* / 4 \pi d^2 \cos^2\alpha$ (68) and $\Phi_Y^* = \Phi_Y S_{Yb}^* / 4 \pi d^2 \cos^2\beta$ (69). in wich: S_{Xb}^* and S_{Yb}^* — the interaction-flux surfaces of X and Y, respectively, in the case (b), [m^2], α and β — the angles formed by the straight line linking the centers of X and Y and the tangents drawn from the centers of X and Y, respectively, to the surfaces of Y and X, respectively. / $S_{Xb}^* = 2 \pi d^2 \cos^2\alpha (1 - \cos\alpha)$ (70) and $S_{Yb}^* = 2 \pi d^2 \cos^2\beta (1 - \cos\beta)$ (71). / On the basis of (68), (35) and (70) and, respectively, of (69), (36) and (71): / $\Phi_X^* = \varphi_0 u_X (1 - \cos\alpha) / 2$ (72) and $\Phi_Y^* = \varphi_0 u_Y (1 - \cos\beta) / 2$ (73). / 2) The general concept of the interaction-flux specific surface / a) $d >> r_X$ and r_Y / On the basis of (60), (62) and (64) and, respectively, of (61), (63) and (65): $F = F_X = \Phi_X^* (u_Y / \pi r_Y^2)$ (74) and $F = F_Y = \Phi_Y^* (u_X / \pi r_X^2)$ (75). / It can be ascertained that: 1) according to (74) and (75), the force acting between X and Y is the interaction between the interaction-flux of a part and a superficial charge density of the other part, calculated for the interaction-flux surface of the first part; 2) the interaction-flux of a part exclusively falls on its interaction-flux surface determined by the radius of the other part; 3) through the radii of X and Y the expressions (74) and (75) reflect the spatiality of them, as well as of their charges. / However, the charge of a part cannot be considered to be limited to the interaction-flux surface of the other part, namely to its own central cross-section, because the spatial distribution of the charges is three-dimensional. For this reason, (74) and (75) can be written: $F = F_X = \Phi_X^* / (\pi r_Y^2 / u_Y)$ (76) and $F = F_Y = \Phi_Y^* / (\pi r_X^2 / u_X)$ (77). / (Continuation in the Fifth Statement).==========

Date: October 26, 2006.

Signature: Ad. J

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Tanúsítvány:
Ügyszám: 4498 /2006.

Tanúsítom, hogy **Adorjan Istvan** (Calugareni, 1959. december 20., anyja neve kijelentése

előttem saját kezűleg írta alá. ----------
Ez a tanúsítvány az okiratokon lévő aláírások valódiságát tanúsítja. ----------
Kelt Budapesten, 2006. kettőezer-hatodik év október hó 26. huszonhatodik napján. ----------

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FIFTH STATEMENT

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The undersigned István Adorján, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright of my physical theory entitled CLASSICAL GENERAL LAWS OF THE FIELD-MEDIATED INTERACTIONS AND FORCES I present six statements to the notary public for their being certainly dated:==========

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The content of the fifth part of my theiry entitled Classical general laws of the field-mediated interactions and forces, representing the further development of my former theory entitled Classical inductive general law of the fundamental physical interactions and forces, is thefollowing:==========

(Continuation of the Fourth Statement) The ratio of the interaction-flux surface of a part and the charge of the other part may be termed interaction-flux specific surface. The expressions of the interaction-flux specific surfaces of X and Y: $\Sigma_X^* = S_{Xa}^* / u_Y = \pi r_Y^2 / u_Y$ (78) and $\Sigma_Y^* = S_{Ya}^* / u_X = \pi r_X^2 / u_X$ (79). / b) $d \sim r_X$ and r_Y / $F_X = \sigma_X \Phi_X^*$ (80) and $F_Y = \sigma_Y \Phi_Y^*$ (81), in which: σ_X and σ_Y — the force factors of X and Y, respectively, [U / m^2]. / $F_X = F_Y = F \Leftrightarrow \Phi_X^* / \Phi_Y^* = \sigma_Y / \sigma_X$ (82). / On the basis of (82), (68), (69), (35) and (36): $\sigma_Y / \sigma_X = u_X S_{Xb}^* \cos^2\beta / u_Y S_{Yb}^* \cos^2\alpha$ (83). / $\sigma_X = u_Y \cos^2\alpha / S_{Xb}^*$ (84) and $\sigma_Y = u_X \cos^2\beta / S_{Yb}^*$ (85). / $d^2 = r_Y^2 / \sin^2\alpha = r_X^2 / \sin^2\beta$ (86). / On the basis of (84), (70) and (86), and, respectively, of (85), (71) and (86): $\sigma_X = u_Y (1 + \cos\alpha) / 2 \pi r_Y^2$ (87) and $\sigma_Y = u_X (1 + \cos\beta) / 2 \pi r_X^2$ (88). / As the superficial charge distribution cannot be interpreted physically in this case either: $\Sigma_X^* = 1 / \sigma_X = 2 \pi r_Y^2 / u_Y (1 + \cos\alpha)$ (89), / $\Sigma_Y^* = 1 / \sigma_Y = 2 \pi r_X^2 / u_X (1 + \cos\beta)$ (90). / 3) The general interaction law / On the basis of (76) and (78), as well as of (77) and (79), and, respectively, of (80) and (89), as well as of (81) and (90): $F_X = \Phi_X^* / \Sigma_X^*$ (91) and $F_Y = \Phi_Y^* / \Sigma_Y^*$ (92). / It can be ascertained that: 1) the general interaction law consists of two general force laws: the first one refers to the force exerted by X onto Y, the second one to the force exerted by Y onto X; 2) between these two general force laws a quantitative identity and a qualitative, expression difference exists simultaneously; 3) according to these general force laws the force is the interaction between the interaction flux of a part and its interaction-flux specific surface, determined by variable physical quantities characterizing properties of the other part; 4) these two general force laws are formed of interaction-specific variable physical quantities, which manifest itself in that in case of these two forces the same physical quantities generally differ from each other both quantitatively and qualitatively. / 4) Corroboration / The deduction of the general force law. On the basis of (91), (66) and (78), as well as of (92), (67) and (79), and, respectively, of (91), (72) and (89), as well as of (92), (73) and (90), the expression (21) of the general force law can be deducted. / 5) Consequences / 5.1) The deduction of the particular interaction laws. From the general interaction law, the particular — namely the gravitational, the electric, the magnetic, the strong and the "weak" — interaction laws can be deducted. For example, applying the expressions (91) and (92) to the gravitational interaction, the gravitational interaction law can be obtained: $F_{XG} = \Phi_{XG}^* / \Sigma_{XG}^*$ (93) and $F_{YG} = \Phi_{YG}^* / \Sigma_{YG}^*$ (94). in which: F_{XG} — the gravitational force exerted by X onto Y, [N], F_{YG} — the gravitational force exerted by Y onto X, [N], Φ_{XG}^* and Φ_{YG}^* — the gravitational interaction fluxes of X and Y, respectively, [N m^2 / kg], Σ_{XG}^* and Σ_{YG}^* — the gravitational interaction-flux specific surfaces of X and Y, respectively, [m^2 / kg]. / $\varphi_0 = \gamma_0$ (95), and $q = m = q_G$ (96), a) $d >> r_X$ and r_Y / On the basis of (66), (95) and (96), and, respectively, of (67), (95) and (96): $\Phi_{XG}^* = \gamma_0 q_{XG} r_Y^2 / 4 d^2$ (97) and $\Phi_{YG}^* = \gamma_0 q_{YG} r_X^2 / 4 d^2$ (98). / On the basis of (78), (95) and (96), and, respectively, of (79), (95) and (96): $\Sigma_{XG}^* = \pi r_Y^2 / q_{YG}$ (99) and $\Sigma_{YG}^* = \pi r_X^2 / q_{XG}$ (100). / b) $d \sim r_X$ and r_Y / On the basis of (72), (95) and (96), and, respectively, of (73), (95) and (96): $\Phi_{XG}^* = \gamma_0 q_{XG} (1 - \cos\alpha) / 2$ (101) and $\Phi_{YG}^* = \gamma_0 q_{YG} (1 - \cos\beta) / 2$ (102). / On the basis of (89), (95) and (96), and, respectively, of (90), (95) and (96): $\Sigma_{XG}^* = 2 \pi r_Y^2 / q_{YG} (1 + \cos\alpha)$ (103) and $\Sigma_{YG}^* = 2 \pi r_X^2 / q_{XG} (1 + \cos\beta)$ (104). / On the basis of (93), (97) and (99), as well as of (94), (98) and (100), and, respectively, of (93), (101), (103) and (86), as well as of (94), (102), (104) and (86), the gravitational law of Newton can be deducted. / 5.2) The graviton. The interaction fields are quantified. The quantum of the gravitational field is the graviton. Facts support the hypothesis that in the table of the "elementary" particles in conformity with the rest mass, the graviton is situated in the first place, preceding the photon: 1) in this table the field quanta regularly precede the smallest field source; 2) the displacement of the apparent positions of the stars in the gravitational field of the sun proves that the photon is a gravitational field source; 3) the experimental detection of the gravitational waves is more difficult than the detection of the electromagnetic waves. / 5.3) The hypothesis of the generality of the magnetism. It is a fact that an electric charge moving in a given system of co-ordinates is a double field source. (Continuation in the Sixth Statement).

Date: October 26, 2006.

Signature: Adorjá

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Tanúsítvány:
Ügyszám: 4497 /2006.

Tanúsítom, hogy **Adorjan Istvan** (Calugareni, 1959. december 20., anyja neve kijelentése

előttem saját kezűleg írta alá. ----------
Ez a tanúsítvány az okiratokon lévő aláírások valódiságát tanúsítja. ----------
Kelt Budapesten, 2006. kettőezer-hatodik év október hó 26. huszonhatodik napján. ----------

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SIXTH STATEMENT

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The undersigned István Adorján, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright of my physical theory entitled CLASSICAL GENERAL LAWS OF THE FIELD-MEDIATED INTERACTIONS AND FORCES I present six statements to the notary public for their being certainly dated:==========

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The content of the sixth part of my theiry entitled Classical general laws of the field-mediated interactions and forces, representing the further development of my former theory entitled Classical inductive general law of the fundamental physical interactions and forces, is thefollowing:==========

(Continuation of the Fifth Statement) On a structure-identity basis, the electric and magnetic interactions mediated by the electric and, respectively, the magnetic fields are parts of the class of the field-mediated interactions, which interactions are subordinated to a single general law. Consequently, the limitedness of magnetism to electromagnetism has no theoretical ground. For this reason, it can be supposed that each type of charge in motion is a double field source. / 5.4) Hypothetical gravitational magnetic constant and force law. The identity of structure of the expressions (18) and (19) of the gravitational and, respectively, electric force laws substantiates the hypothesis of the structural identity of the expressions of the gravitational magnetic force law and the expression (20) of the electric magnetic force law: $F_{MG} = \mu_{0G}\, q_{XG}\, q_{YG}\, v_X\, v_Y \sin\theta \sin\omega / 4\pi d^2$ (104), in which: F_{MG} — the gravitational magnetic force acting between X and Y, [N], μ_{0G} — the gravitational magnetic specific flux, [N s^2 / kg^2]. / According to the formula of Maxwell: $c = 1 / (\varepsilon_0\, \mu_0)^{1/2}$ (105). / On the basis of (105) and (17): $c = (\delta_0 / \mu_0)^{1/2}$ (106). / On the basis of extending the analogy of the gravitational and electric interactions to the expression (106) and of (16): $c_g = (\gamma_0 / \mu_{0G})^{1/2} = (4\pi G / \mu_{0G})^{1/2}$ (107), in which: c_g — the spreading velocity of the graviton, [m / s]. / According to to the postulate of Einstein: $c_g = c$ (108). / On the basis of (107) and (108): $\mu_{0G} = 4\pi G / c^2 = 9.31 \cdot 10^{-27}$ N s^2 / kg^2 (109). / For example: ($q_{XG} = q_{YG} = 10^3$ kg and $v_X = v_Y = 1$ m / s and $\theta = \omega = \pi / 2$ rad and d = 100 m): $F_{MG} = 7.41 \cdot 10^{-26}$ N. / 5.5) The general concept of the field-mediated interaction. A field-mediated interaction is that reciprocal action onto each other of two bodies, which they exert by the interaction fluxes of the fields produced by their charges onto the interaction-flux specific surfaces of each other. These reciprocal actions are expressed by the field-mediated forces constituted by the ratios of their interaction fluxes and interaction-flux specific surfaces. A field-mediated interaction may be marked as follows: X–(κ)–Y (110), / in which : X and Y — the interacting parts, / κ — the quantum of the interaction-field. / 5.4) The general interaction index / a) $d >> r_X$ and r_Y / On the basis of (66) and (67), as well as of (78) and (79): $f = \Phi_X^* / \Phi_Y^* = \Sigma_X^* / \Sigma_Y^* = u_X\, r_Y^2 / u_Y\, r_X^2$ (111), in which: : f — the general interaction index of the interaction of X and Y. / If $u_X = u_Y$ and $r_X = r_Y$ — in case of which, according to (111), f = 1 — X and Y are equal in rank in their interaction. Applying (111) to the solar system ($u_X = q_{XG}$, $u_Y = q_{YG}$ and $f = f_G$) in every case the gravitational interaction index is larger than one in favor of the sun (X is the sun). Further, in the electric interaction of the nuclei and the electron ($u_X = q_{XE}$, $u_Y = q_{YE}$ and $f = f_E$) $f_E > 1$ in favor of the nuclei (the Xs are the nuclei). Beginning from the lithium, in the electric interaction of the ions charged +1 and the electron the electric interaction index is larger than one in favor of the electron (X is the electron). On the basis of (111): $f = u_X / r_X^2 \,//\, u_Y / r_Y^2$ (112). / According to (112) the general interaction index can be expressed as a ratio of the properties of X and Y. From all these it results that in the field-mediated interaction of X and Y — and only in respect of the given interaction — the general interaction index indicates the super-ordinate role of that interacting part in favor of which f > 1. / b) $d \sim r_X$ and r_Y / On the basis of (72) and (73), as well as of (89) and (90): $f = \Phi_X^* / \Phi_Y^* = \Sigma_X^* / \Sigma_Y^* = u_X (1 - \cos\alpha) / u_Y (1 - \cos\beta)$ (113).==========

In connection with the Seventh Statement, I mention that I also elaborated another method and made the respective calculations for the "quantum flux quantum" h c / e. It resulted an electron-radius formula very resembling the formula of the Compton wave-length of the electron and therefore its value was very close to the value of the Compton wave-length of the electron.This second method was not submitted for publication.====

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Date: October 26, 2006.

Signature: Adorjá

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Tanúsítvány:
Ügyszám: 4496 /2006.

Tanúsítom, hogy **Adorjan Istvan** (Calugareni, 1959. december 20., anyja neve kijelentése

előttem saját kezűleg írta alá. ----------
Ez a tanúsítvány az okiratokon lévő aláírások valódiságát tanúsítja. ----------
Kelt Budapesten, 2006. kettőezer-hatodik év október hó 26. huszonhatodik napján. ----------

dr Walkshöfer Katalin

doktor Walkshőfer Katalin
budapesti közjegyző

DR. WALKSHÖFER KATALIN közjegyző BUDAPEST

SEVENTH STATEMENT

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The undersigned István Adorján, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright of my physical theory entitled ELECTRON MODEL, METHOD AND FORMULA FOR CALCULATING THE RADII OF THE PHOTONS, I present this statement to the notary public for its being certainly dated:==========

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The content of my theory entitled Electron model, method and formula for calculating the radii of the photons, elaborated in September 2006, mailed for consideration to Reviews of Modern Physics (Ridge, N.Y., USA) on September 26, 2006 is the following: ==========

ELECTRON MODEL, METHOD AND FORMULA FOR CALCULATING THE RADII OF THE PHOTONS /

According to the corpuscular theory of Newton, then to the photon theory of Einstein, the light consists of particles. Those constitute the quanta of the electric field. The smallest electric-field source is the electron, which is expectable to be in the closest connection with the photons. / Be a spherical electron. According to the law of Gauss: / $\Phi_e = e / \varepsilon_0$ (1), in which: Φ_e — the flux of the electric field of the electron, [N m^2 / C], / e — the electric charge of the electron, [C], / ε_0 — the electric permitivity constant, [C^2 / N m^2]. / The electron is formed of a material kernel and an energy shell. The mass of the kernel and the energy of the shell continually change into each other. These two opposing processes are balanced. The energy shell consists of radially fluctuating photons. In a given condition, the electron fluctuates only with photons having a given frequency and wave-length, respectively. Considered to be spherical, the photons developing from the electron kernel at the velocity of the light occupy half of the sphere surfaces, while the photons developing back into the electron kernel occupy the other half of those surfaces. / $\Phi_e = m_\gamma c \omega S_e / 2 e$ (2), in which: m_γ — the masses of the photons, [kg], / c — the velocity of the light, [m / s], / ω — the number of the photons emerged from the electron kernel in a unit time, [1 / s], / S_e — the surface of the electron, [m^2]. / Depending on the radii of the photons, the electron kernel emits and, respectively, absorbs the photons in a limited number. The more approaching the size of the electron, the smaller is the number of the fluctuating photons that, then the measure in which they get above the surface of the electron-kernel sphere. / $r_\gamma = n c / 2 \omega$ (3) and $S_e = 8 n r_\gamma^2$ (4), in which: r_γ — the radii of the photons, [m], / n — the number of the photons in course of developing from the surface of the electron kernel in a given moment. / Eliminating n from (3) and (4): / $\omega = c S_e / 16 r_\gamma^3$ (5). On the basis of (2) and (5): / $\Phi_e = m_\gamma c^2 S_e^2 / 32 e r_\gamma^3$ (6). Since: / $m_\gamma = h \nu_\gamma / c^2$ (7) and $S_e = 4 \pi R_e^2$ (8), in which: h — the constant of Planck, [J s], / ν_γ — the frequencies of the photons, [Hz], / R_e — the radius of the electron , [m] — on the basis of (1), (6), (7) and (8): $r_\gamma = [\pi^2 \varepsilon_0 h R_e^4 / 2 e^2]^{1/3} \nu\gamma^{1/3}$ (9). / It is known that the frequencies — therefore also the masses — of the photons coming into being from the electron-positron "annihilation" are equal to the frequency and, respectively, the mass of the electron. On the basis of this it can be supposed that those photons are equal to the electron in their radii as well: / $\nu_\gamma = \nu_e = m_e c^2 / h \Leftrightarrow r_\gamma = R_e$ (10), in which: ν_e — the Compton frequency of the electron, [Hz], / m_e — the mass of the electron, [kg]. / On the basis of (9) and (10): / $R_e = 2 e^2 / \pi^2 \varepsilon_0 m_e c^2 = 7.16 \cdot 10^{-15}$ m (11). On the basis of (9) and (11): / $r_\gamma = R_e [\nu_\gamma / \nu_e]^{1/3} = s \nu_\gamma^{1/3}$ (12), $s = R_e / \nu_e^{1/3} = 1.43 \cdot 10^{-21}$ m s$^{1/3}$ (13), in which: s — the photon-radius constant, [m s$^{1/3}$]. / Examples / The table below presents the radii of a number of photon types: NUMBER: 1, 2, 3, 4, 5, 6, 7, 8; PHOTON TYPE: Radio, Micro, Infra-red, Visible, Ultra-violet, Röntgen, Electron-frequency photon, Gamma; PHOTON FREQUENCY, [Hz]: 10^3, 10^6, 10^{10}, 10^{13}, 10^{15}, 10^{16}, 10^{18}, $1.23 \cdot 10^{20}$, 10^{21}; PHOTON RADIUS, [m]: $1.43 \cdot 10^{-20}$, $1.43 \cdot 10^{-19}$, $3.07 \cdot 10^{-18}$, $3.07 \cdot 10^{-17}$, $1.43 \cdot 10^{-16}$, $3.07 \cdot 10^{-16}$, $1.43 \cdot 10^{-15}$, $7.16 \cdot 10^{-15}$, $1.43 \cdot 10^{-14}$. / The interpretation of the results / On the basis of the above values it can be ascertained that: / 1) as the expression of R_e is structurally equal to the expression of the "classical" radius of the electron and as the value of R_e comes close to the value of that, the photon-radius values can be considered to be relatively exact; / 2) regularly the radii of the photons are much smaller than the radius of the electron; / 3) the photons of electron frequency, namely of electron radius can be found in the upper boundary band of the known frequency scale; / 4) the grading of the "elementary" particles conforming to dimension does not change the location of the photons as compared with the grading conforming to the rest mass; / 5) on the basis of the statements (3) and (4) it is presumable that photons with radii considerably larger than the radius of the electron do not exist, the band of the γ-photons — for the transitional zone of the photons and the leptons — constitutes the edge of the photon scale; this supposition is supported by the formula (12) as well, according to which for doubling the radius an eightfold increase of the frequency is necessary. /==========

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Date: October 26, 2006.

Signature: Adorján

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Tanúsítvány:
Ügyszám: 4495 /2006.

Tanúsítom, hogy **Adorjan Istvan** (Calugareni, 1959. december 20., anyja neve kijelentése

előttem saját kezűleg írta alá. ----------
Ez a tanúsítvány az okiratokon lévő aláírások valódiságát tanúsítja. ----------
Kelt Budapesten, 2006. kettőezer-hatodik év október hó 26. huszonhatodik napján. ----------

dr Walkshöfer Katalin

doktor Walkshöfer Katalin
budapesti közjegyző

DR. WALKSHÖFER KATALIN közjegyző BUDAPEST

2.1.5. Seven notarial statements of 2 March 2007

ELSŐ NYILATKOZAT — FIRST STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), a fizikai rendszerekre, mozgásokra és kölcsönhatásokra vonatkozó elméleteimmel kapcsolatos szerzői jogaim védelme céljából hét nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my theories concerning the physical systems, motions and interactions I present seven statements to the notary public for its being certainly dated:

I further developed my physical theory entitled Contributions to a general theory of the physical systems between 08 and 15 December, 2006. The content of the first part of the new text part is the following: $F = - m \cdot a$ (1), / in which: F — the force acting on the anti-matter body, [N], / m — the mass of the anti-matter body, [kg], / a — the acceleration of the anti-matter body, [m / s^2]. / 3) The law of universal gravitation and anti-gravitation. In the case of the bodies X and Y, with the masses m_X and m_Y, being at a big distance r from each other, the gravitational law of Newton vectorially: / $\mathbf{F_X} = - (G\, m_X\, m_Y / r^3)\, \mathbf{r_Y}$ (2) and $\mathbf{F_Y} = - (G\, m_X\, m_Y / r^3)\, \mathbf{r_X}$ (3), / in which: $\mathbf{F_X}$ — the vector of the gravitational force exerted by X on Y, [N], / $\mathbf{F_Y}$ — the vector of the gravitational force exerted by Y on X, [N], / $\mathbf{r_X}$ — the position vector of X to Y, [m], / $\mathbf{r_Y}$ — the position vector of Y to X, [m], / G — the constant of Newton, [N m^2 / kg^2]. / According to this law, if X and Y are anti-matter bodies — m_X and m_Y being negative — the forces acting between them are attractive, just as in case of the matter bodies. If only X or only Y are anti-matter bodies, the forces are repelling. Accordingly, the scalar form of Newton's gravitational law remains valid, with the exception of two cases, when it must be marked with the negative sign: / ($m_X < 0$ or $m_Y < 0$) $\Leftrightarrow$ $F = - G\, m_X\, m_Y / r^2$ (4). / These theoretical results correspond to the anti-symmetrical relation between the electrostatic and the gravitational interactions suggested by the experimental results as well. On the basis of these, the universality of Newton's gravitational law can be supported. / 4) The impulse of the anti-matter. / $F = dp / dt = - m\, a = - m\, dv / dt$ $\Leftrightarrow$ $p = - m\, v$ (5), / in which: p — the impulse of the anti-matter body, [N s], / t — the time, [s], / v — the velocity of the anti-matter body, [m / s]. / a) $v << c$ $\Leftrightarrow$ $m = m_0$ (6), / b) $v \sim c$ $\Leftrightarrow$ $m = m_0 (1 - v^2 / c^2)^{-1/2}$ (7), / in which: m_0 — the rest mass of the anti-matter body, [kg], / c — the velocity of the light, [m / s]. / 5) The energy of the anti-matter. / a) $v << c$ $\Leftrightarrow$ $F = - m\, a = - m\, dv / dt = - m\, (dv / dx)\, (dx / dt)$ $\Leftrightarrow$ $F\, dx = - m\, v\, dv$ $\Leftrightarrow$ $W = \int F\, dx = - m \int v\, dv = - m\, (v^2 - v_0^2) / 2$ (8), / in which: x — the position of the anti-matter body, [m], / W — the work function exerted by the force F on the anti-matter body, [J]. / Considering the theorem of kinetic energy to be valid for the anti-matter as well: / $W = \Delta T = T - T_0 = (- m\, v^2 / 2) - (- m\, v_0^2 / 2)$ (9), / in which: T — the kinetic energy of the anti-matter body, [J]. / On the basis of (9), the kinetic energy of the anti-matter: / $T = - m\, v^2 / 2$ (10). / b) $v \sim c$ $\Leftrightarrow$ $F = dp / dt = - m_0\, (d / dt)\, [v (1 - v^2 / c^2)^{-1/2}] = - m_0 (1 - v^2 / c^2)^{-3/2})\, (dv / dt)$ (11), / $W = \int F\, dx = - m_0 \int (1 - v^2 / c^2)^{-3/2}\, v\, dv = - m_0\, c^2\, [(1 - v^2 / c^2)^{-1/2} - 1]$ (12). / On the basis of the theorem of kinetic energy: / $W = T = E - E_0 = [-m_0\, c^2\, (1 - v^2 / c^2)^{-1/2}] - (- m_0\, c^2) = - c^2\, \Delta m$ (13), / in which: E — the total energy of the anti-matter body, [J]. / On the basis of (13), the rest and, respectively, the total energy of the anti-matter: / $E_0 = - m_0\, c^2$ (14) and $E = -m_0\, c^2\, (1 - v^2 / c^2)^{-1/2}] = - m\, c^2$ (15). / 6) The energetic mass of the anti-matter. In case of the anti-matter: / $m < m_0 < 0$ $\Leftrightarrow$ $\Delta m = [m_0\, (1 - v^2 / c^2)^{-1/2} - m_0] < 0$ (16). / On the basis of (16), generalizing for every form of energy: / $\Delta m = - W / c^2 = - T / c^2 = - E_{am} / c^2$ (17), / in which: E_{am} — any energy form of the anti-matter body, [J]. / In case of the anti-matter, the principle of equivalence of mass and energy comes across so that any (positive) energetic effect exerted on the anti-matter increases the mass of the anti-matter in a negative value. / 7) The photon and the concept of motional mass. As in case of the photon $m_{0\gamma} = 0$ and $v_\gamma = c$, on the basis of (7) $m_\gamma = 0 / 0$, namely the concept of motional mass of the photon cannot be mathematically and physically interpreted. The photon can be absorbed by a particle or an anti-particle and according as the rest masses of those are positive or, respectively, negative, the (positive) energy of the photon metamorphize into a positive and, respectively, negative energetic mass of the pertinent particle or anti-particle, causing positive and, respectively, negative mass differences, on the basis of the formulas below: / $\Delta m_m = E_\gamma / c^2 = h\, \nu / c^2$ (18) and, respectively, $\Delta m_{am} = - E_\gamma / c^2 = - h\, \nu / c^2$ (19), / in which: Δm_m — the mass difference of the matter body caused by the photon absorption, [kg], / Δm_{am} — the mass difference of the anti-matter body caused by the photon absorption, [kg], / E_γ — the energy of the photon, [J], / ν — the frequency of the photon, [Hz], / h — the constant of Planck, [J s]. / Otherwise, for example, also in the process of electron-positron pair formation the (positive) energy of the gamma photon doubles into a positive and a negative mass of the same absolute value. / 8) The needlessness of Dirac's hypothesis of the "densely populated vacuum". In the electron theory of Dirac, the "negative mass dilemma" coming from the negative variant of the relation between energy and impulse — (The continuation in the Second Statement)

Dátum / Date: 2007, Február 11. / February 11, 2007. Aláírás / Signature: Adorján

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1534/2007. ügyszám

Alulírott budapesti közjegyző tanúsítom, hogy ezt a túloldali okiratot----------
Adorján István (született: Calugareni, 1959. december 20., [redacted] ampolgár), aki személya[redacted] kellőképpen igazolta, előttem saját kezűleg írta alá.----------
Kelt, Budapesten 2007. (kettőezer-hetedik) év március hó 2. (második) napján.---------

Dr. Keresztesi Ella közjegyző Budapest

Dr. Keresztesi Ella
budapesti közjegyző

MÁSODIK NYILATKOZAT — SECOND STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), a fizikai rendszerekre, mozgásokra és kölcsönhatásokra vonatkozó elméleteimmel kapcsolatos szerzői jogaim védelme céljából hét nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my theories concerning the physical systems, motions and interactions I present seven statements to the notary public for its being certainly dated:

I further developed my physical theory entitled Contributions to a general theory of the physical systems between 08 and 15 December, 2006. The content of the second part of the new text part is the following:
(Continuation from the First Statement) / which, on the basis of (14) and (15), cannot physically be accepted — can be solved by accepting the formula (1). Further, on the basis of the consequences of that formula, the electron-positron pair formation can be explained and the arising a newer hypothesis becomes unnecessary. By this means the anti-particles physically become equal in rank with the particles, as well as their existence and properties become explainable with their own existence and properties.

I also further developed my physical theory entitled Classical general laws of the field-mediated interactions and forces in January 2007. The content of the first part of the new text part is the following:
2) Classical general laws of the field-mediated interactions / In common with the radial-field-mediated interactions, the magnetic interaction is a part of the class of the field-mediated interactions. / Be X and Y two spherical bodies, as described under point (1.1.1), at the distance $d >> r_X$ and r_Y from each other, being in motion in a common system of co-ordinates, in the same plane, on straight lines, at the velocities v_X and v_Y, respectively, considerably smaller than the velocity of the light, and producing around themselves the gravitational, electric and, respectively, magnetic fields with the intensities g_X and g_Y, E_X and E_Y, and, respectively, B_X and B_Y. The expressions of the magnetic forces acting between X and Y, F_{XM} and F_{YM}, can be written on the basis of the laws of Laplace, Lorentz, Biot and Savart: / $F_{XM} = \mu_0 (q_X q_Y v_X v_Y \sin \zeta \sin \iota / 4 \pi d^2)$ (97), / $F_{YM} = \mu_0 (q_X q_Y v_X v_Y \sin \eta \sin \theta / 4 \pi d^2)$ (98), / in which: F_{XM} — the magnetic force exerted by X onto Y, [N], / F_{YM} — the magnetic force exerted by Y onto X, [N], / μ_0 — the magnetic permeability of the vacuum, [Wb / A m], / ζ and η — the angles formed by the straight line linking the centers of X and Y with v_X and v_Y, respectively, / θ and ι — the angles formed by the magnetic induction vectors of Y and X with v_X and v_Y, respectively. / 2.1) Classical inductive general law of the field-mediated interactions / 2.1.1) The induction of the classical general law of the field-mediated interactions / On the basis of the definitions of the intensities of the gravitational and electric fields, as well as of the law of Lorentz: / $F_{XG} = m_Y g_X$ (99), $F_{YG} = m_X g_Y$ (100), / $F_{XE} = q_Y E_X$ (101), $F_{YE} = q_X E_Y$ (102), / $F_{XM} = q_Y v_Y B_X \sin \iota$ (103), $F_{YM} = q_X v_X B_Y \sin \theta$ (104). / Generalizing: / $F_X = u_Y I_X$ (105), $F_Y = u_X I_Y$ (106), / in which: F_X — the field-mediated force exerted by X onto Y, [N], / F_Y — the field-mediated force exerted by Y onto X, [N], / u_X and u_Y — the field sources of X and Y, respectively, [U], / I_X and I_Y — the intensities of the fields of X and Y, respectively, [N / U]. / On the one hand, it can be ascertained that the expressions (105) and (106) are valid for the gravitational, electric and magnetic interactions of X and Y. On the other hand, a strong force exerted, for example, by X onto Y preconditions the existence of the strong charge of Y in the strong field of X. Therefore, the expressions (105) and (106) can be considered the general force laws of a classical inductive general law of the field-mediated interactions. However, according to ascertainments under point (1.1.5) as well, the expressions (105) and (106) are subject to improvement. / The structure of the field-mediated interactions: / (field source X)—(field)—(field source Y) (107). / 2.1.2) Corroborations / 2.1.2.1) The deduction of the gravitational law of Newton / According to the law of Gauss: / $g_X = G m_X / d^2$ (108), $g_Y = G m_Y / d^2$ (109). / On the basis of (99) and (108), and, respectively, of (100) and (109), the expression (1) of the gravitational law of Newton can be deducted. / 2.1.2.2) The deduction of the law of Coulomb / According to the law of Gauss: / $E_X = q_X / 4 \pi \varepsilon_0 d^2$ (110), $E_Y = q_Y / 4 \pi \varepsilon_0 d^2$ (111). / On the basis of (101) and (110), and, respectively, of (102) and (111), the expression (2) of the law of Coulomb can be deducted. / 2.1.2.3) The deduction of the law of Laplace, Lorentz, Biot and Savart / According to the law of Biot and Savart: / $B_X = \mu_0 q_X v_X \sin \zeta / 4 \pi d^2$ (112), $B_Y = \mu_0 q_Y v_Y \sin \eta / 4 \pi d^2$ (113). / On the basis of (103) and (112), and, respectively, of (104) and (113), the expressions (97) and (98) of the laws of Laplace, Lorentz, Biot and Savart can be deducted. / 2.1.3) Consequences / 2.1.3.1) The magnetic specific flux / Considering the electric charge and its velocity to be the dimensional variable physical quantities characterizing the magnetic-field sources, according to its dimensions, (The continuation in the Third Statement)

Dátum / Date: 2007, Február 11. / February 11, 2007. Aláírás / Signature: Adorján

HITELESÍTÉS A TÚLOLDALON

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péntek 9-14 óráig

1535/2007. ügyszám

Alulírott budapesti közjegyző tanúsítom, hogy ezt a túloldali okiratot----------
Adorján István (született: Cel[illegible]ni, 1959. december 20., [redacted] ampolgár), aki személya[redacted] kellőképpen igazolta, elottem saját kezűleg írta alá.----------
Kelt, Budapesten 2007. (kettőezer-hetedik) év március hó 2. (második) napján.---------

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közjegyző
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budapesti közjegyző

HARMADIK NYILATKOZAT — THIRD STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), a fizikai rendszerekre, mozgásokra és kölcsönhatásokra vonatkozó elméleteimmel kapcsolatos szerzői jogaim védelme céljából hét nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my theories concerning the physical systems, motions and interactions I present seven statements to the notary public for its being certainly dated:

I further developed my physical theory entitled Classical general laws of the field-mediated interactions and forces in January, 2007. The content of the second part of the new text part is the following:

(Continuation from the Second Statement) / the magnetic permeability constant can be considered the specific flux in vacuum of the magnetic field. On the basis of the law of Biot and Savart, as well as of the general definition of the field flux, a definition of the magnetic specific flux can be given: / $\int (\sin \zeta \cos \omega / d^2)\, dS = 4 \pi / q_X v_X \Leftrightarrow \Phi_{XM} = \mu_0$ Wb (114), / in which: S — a surface satisfying the condition (114), [m^2], / ω — the angle between the vectors B_X and dS. / 2.1.3.2) The "emissive" and "absorptive" aspects of the field sources / In generalizing the intensities of the fields, the necessity arises of making quantitative distinctions between two aspects of the field sources. A field source generally emits a field, and by means of the virtual field quanta it can act to another field source — this aspect of the field source may be characterized as "emissive". Further, a field source can absorb the virtual field quanta of another field source, and by this means it can bear the action of the respective field source — this aspect of the field source may be characterized as "absorptive". At the same time, there could be circumstances under which one or both aspects of a field source are missing. These cases may be characterized as "emissively neutral" and, respectively, "absorptively neutral". For example, on the direction of its velocity, a magnetic field source has magnetic "emissive neutrality" and in case when the direction of its velocity coincides with the direction of the magnetic induction vector of its interacting magnetic-field source, it has "absorptive neutrality". / 2.1.3.3) The general law of the intensities of fields / Discovering the general law of the intensities of fields — likewise the general law of the radial fluxes, in the case of the radial forces — becomes only possible by quantitatively distinguishing between the "emissive" and "absorptive" aspects of the field sources. Generalizing on the basis of (11), (12) and (107) − (112): / $I_X = \varphi_0 u_{Xe} / 4 \pi d^2$ (115), $I_Y = \varphi_0 u_{Ye} / 4 \pi d^2$ (116), / in which: φ_0 — the specific flux of the fields, [N m^2 / U^2], / u_{Xe} and u_{Ye} — the "emissive" field sources of X and Y, respectively, [U]. / 2.1.3.4) The reconsideration of the classical inductive general law of the field-mediated interactions / Taking into account the considerations under point (2.1.3.2), the expressions (105) and (106) must be reconsidered by specifying the field-source aspects implied: / $F_X = u_{Ya} I_X$ (117), $F_Y = u_{Xa} I_Y$ (118), / in which: u_{Xa} and u_{Ya} — the "absorptive" field sources of X and Y, respectively, [U]. / On the basis of (117) and (115), and, respectively, of (118) and (116): / $F_X = \varphi_0 u_{Xe} u_{Ya} / 4 \pi d^2$ (119), $F_Y = \varphi_0 u_{Ye} u_{Xa} / 4 \pi d^2$ (120). / 2.1.3.5) The quantitative equality of the radial "emissive" and "absorptive" field sources / In the case of the radial interactions, on the basis of (118), (119) and (16), and according to the third law of Newton: / ($u_{Xe} u_{Ya} = u_{Xa} u_{Ye} = u_X u_Y$) $\Leftrightarrow$ ($u_{Xe} = u_{Xa} = u_X$ and $u_{Ye} = u_{Ya} = u_Y$) (121). / 2.1.3.6) The general qualitative and quantitative inequality of the magnetic "emissive" and "absorptive" field sources / For the magnetic interaction of X andY: / $u_{XMe} = q_{Xe} v_X \sin \zeta$ (122), $u_{YMa} = q_{Ya} v_Y \sin \iota$ (123), / $u_{YMe} = q_{Ye} v_Y \sin \eta$ (124), $u_{XMa} = q_{Xa} v_X \sin \theta$ (125). / It can be ascertained that, except v_X and v_Y, there are no other two variable physical quantities qualitatively identical with each other in the expressions (122) − (125). On the basis of (122) − (125) and (121): / $u_{XMe} / u_{XMa} = \sin \zeta / \sin \theta$ (126), $u_{YMe} / u_{YMa} = \sin \eta / \sin \iota$ (127). / Generally: / ($\sin \zeta / \sin \theta \neq 1$ and $\sin \eta / \sin \iota \neq 1$) $\Leftrightarrow$ ($u_{XMe} \neq u_{XMa}$ and $u_{YMe} \neq u_{YMa}$) (128). / 2.1.3.7) The general condition of the applicability of the third law of Newton / On the basis of (119) and (120): / $F_X = F_Y \Leftrightarrow u_{Xe} u_{Ya} = u_{Ye} u_{Xa}$ (129). / For the case of the magnetic interaction, on the basis of (129), (122) − (125) and (121): / $F_{XM} = F_{YM} \Leftrightarrow \sin \zeta \sin \iota = \sin \eta \sin \theta$ (130). / 2.2) Classical deductive general law of the field-mediated interactions / 2.2.1) The introduction of interaction concepts / 2.2.1.1) The general concept of interaction flux / $\Phi_X^* = I_X S_{XI}^*$ (131), $\Phi_Y^* = I_Y S_{YI}^*$ (132), / in which: Φ_X^* and Φ_Y^* — the interaction fluxes of X and Y, respectively, [N m^2 / U]. / 2.2.1.2) The general concept of interaction-flux specific surface / $F_X = \sigma_X \Phi_X^*$ (133), $F_Y = \sigma_Y \Phi_Y^*$ (134), / in which: σ_X and σ_Y — the force factors of F_X and F_Y, respectively, [U / m^2]. / On the basis of (133), (117) and (131), and, respectively, of (134),(118) and (132): / $\sigma_X = u_{Ya} / S_{XI}^* = u_{Ya} / \pi r_Y^2$ (135), $\sigma_Y = u_{Xa} / S_{YI}^* = u_{Xa} / \pi r_X^2$ (136). / $\Sigma_X^* = 1 / \sigma_X = \pi r_Y^2 / u_{Ya}$ (137), $\Sigma_Y^* = 1 / \sigma_Y = \pi r_X^2 / u_{Xa}$ (138), / in which: Σ_X^* and Σ_Y^* — the interaction-flux specific surfaces of X and Y, respectively, [m^2 / U]. / (The continuation in the Fourth Statement).

Dátum / Date: 2007, Február 11. / February 11, 2007.

Aláírás / Signature: Adorjá

HITELESÍTÉS A TÚLOLDALON

Dr. KERESZTESI ELLA
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1536/2007. ügyszám

Alulírott budapesti közjegyző tanúsítom, hogy ezt a túloldali okiratot----------
Adorján István (született: Calugareni, 1959. december 20., [redacted] állampolgár), aki személyazonosságát [redacted] kellőképpen igazolta, előttem saját kezűleg írta alá.----------
Kelt, Budapesten 2007. (kettőezer-hetedik) év március hó 2. (második) napján.---------

Dr. Keresztesi közjegyző Ella * Budapest

Dr. Keresztesi Ella
budapesti közjegyző

NEGYEDIK NYILATKOZAT — FOURTH STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), a fizikai rendszerekre, mozgásokra és kölcsönhatásokra vonatkozó elméleteimmel kapcsolatos szerzői jogaim védelme céljából hét nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my theories concerning the physical systems, motions and interactions I present seven statements to the notary public for its being certainly dated:

I further developed my physical theory entitled Classical general laws of the field-mediated interactions and forces in January, 2007. The content of the third part of the new text part is the following:

(Continuation from the Third Statement) / 2.2.1.3) The general interaction law / On the basis of (133) and (137), and, respectively, of (134) and (138): / $F_X = \Phi_X^* / \Sigma_X^*$ (139), $F_Y = \Phi_Y^* / \Sigma_Y^*$ (140). / 2.2.2) Corroboration / The deduction of the classical deductive general law of the field-mediated interactions / On the basis of (139), (131) and (137), and, respectively, of (140), (132) and (138), the expressions (117) and (118) of the classical inductive general law of the field-mediated interactions can be obtained. / 2.2.3) Consequences ~ 2.2.4) The "emissive" and "absorptive" interaction fluxes / 2.2.4.1) Concepts and physical quantities / In its present acceptation, the concept of *flux* refers to the "emissive" flux of a field-source. Accordingly, the concept and constant physical quantity of *specific flux* reflects a property of a field source existing in its isolated state as well. At the same time, a field flux can also be "absorptive". The concept of *"absorptive" flux* must refer to a field-mediated interaction. The quantitative estimation of the variable physical quantity of that concept requires the introduction of the concept of interaction flux. / The expressions of the "emissive" interaction fluxes of X and Y, Φ_{Xe}^* and Φ_{Ye}^*, can be obtained on the basis of (131), (115) and (52), and, respectively, of (132), (116) and (53): / $\Phi_{Xe}^* = \varphi_0 u_{Xe} r_Y^2 / 4 d^2$ (149), $\Phi_{Ye}^* = \varphi_0 u_{Ye} r_X^2 / 4 d^2$ (150). / The "absorptive" interaction fluxes of X and Y, Φ_{Xa}^* and Φ_{Ya}^*, can be defined: / $\Phi_{Xa}^* = \varphi_{0X} u_{Xa}$ (151), $\Phi_{Ya}^* = \varphi_{0Y} u_{Ya}$ (152). / in which: φ_{0X} and φ_{0Y} — the "absorptive" interaction specific fluxes of X and Y, respectively, [N m^2 / U^2]. / 2.2.4.2) The hypothesis of the quantitative equality between the "emissive" and "absorptive" interaction fluxes / Defining the "absorptive" interaction specific flux as the flux absorbed by the field-source unit, and accepting: / $\Phi_{Xa}^* = \Phi_{Ye}^*$ (153), $\Phi_{Ya}^* = \Phi_{Xe}^*$ (154). / the following expressions result for the "absorptive" interaction specific fluxes of X and Y: / $\varphi_{0X} = \varphi_0 (u_{Ye} / u_{Xa}) (r_X^2 / 4 d^2)$ (155), $\varphi_{0Y} = \varphi_0 (u_{Xe} / u_{Ya}) (r_Y^2 / 4 d^2)$ (156). / 2.2.4.3) Rapports of the "emissive" interaction fluxes / On the basis of (149), (115) and (52), and, respectively, of (150), (116) and (53): / $\Phi_{Xe}^* = I_X S_{XI}^*$ (157), $\Phi_{Ye}^* = I_Y S_{YI}^*$ (158). / On the basis of (117), (157) and (137), and, respectively, of (118), (158) and (138): / $F_X = \Phi_{Xe}^* / \Sigma_X^*$ (159) and $F_Y = \Phi_{Ye}^* / \Sigma_Y^*$ (160). / On the basis of (94), (149), (150) and (121): / $f = \Phi_{Xe}^* / \Phi_{Ye}^*$ (161). / 2.2.4.4) Hypothetical rapports of the "absorptive" interaction fluxes / On the basis of (156), (115) and (152), and, respectively, of (155), (116) and (151): / $I_X = \varphi_{0Y} u_{Ya} / \pi r_Y^2 = \Phi_{Ya}^* / \pi r_Y^2$ (162) and $I_Y = \varphi_{0X} u_{Xa} / \pi r_X^2 = \Phi_{Xa}^* / \pi r_X^2$ (163). / On the basis of (162), (117) and (137), and, respectively, of (163), (118) and (138): / $F_X = \varphi_{0Y} u_{Ya}^2 / \pi r_Y^2 = \Phi_{Ya}^* / \Sigma_X^*$ and $F_Y = \varphi_{0X} u_{Xa}^2 / \pi r_X^2 = \Phi_{Xa}^* / \Sigma_Y^*$ (164). / On the basis of (94), (155), (156), (121), (151) and (152): / $f = \varphi_{0Y} u_Y / \varphi_{0X} u_X = \Phi_{Ya}^* / \Phi_{Xa}^*$ (165).

I set up my physical theory entitled Classical inductive general law of motion in January-February, 2007. The content of the first part of its text is the following:

CLASSICAL INDUCTIVE GENERAL LAW OF MOTION / 1) The induction of the classical inductive general law of motion / 1.1) The effect of Newton's second law / Be X a particle with the mass m_X, the velocity v_X, considerably smaller than the velocity of the light. The expression of the force F exerted on it is given by the second law of Newton: / $F = m_X a_X = m_X dv_X / dt = dp_X / dt$ (1), / in which: a_X — the acceleration of X brought about by F, [m / s^2], / p_X — the impulse of X, [kg m / s]. / It can be ascertained that: / a) the second law of Newton is applicable to the motion brought about by the gravitational force as well, on the basis of the following expression: / $a_X = g$ (2), / in which: g — the intensity of the gravitational field acting on X, [m / s^2]; / b) the second law of Newton is applicable to the motions brought about by the electric and other field-mediated forces only in so far as they accelerate masses; / c) the second law of Newton is not applicable to the motions of the electric and other types of charges. / Consequently, the second law of Newton can only be considered the law of the motion of masses. A more general law of motion must include the motions of the electric and other types of charges as well. / 1.2) The electrostatic field as a rectilinear acceleration field / In the acceleration of the electric charges brought about by the electric field, the masses play no essential role. Nevertheless, the unit of measure of the electric force is the Newton, comprising the unit of measure of the mass as well, and the unit of measure of the intensity of the electric field is the Newton / Coulomb. (The continuation in the Fifth Statement).

Dátum / Date: 2007, Február 15. / February 15, 2007.

Aláírás / Signature: Adorján

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1537/2007. ügyszám

Alulírott budapesti közjegyző tanúsítom, hogy ezt a túloldali okiratot----------
Adorján István (született: Calugareni, 1959. december 20., [redacted] ampolgár), aki személya[redacted] kellőképpen igazolta, előttem saját kezűleg írta alá.----------
Kelt, Budapesten 2007. (kettőezer-hetedik) év március hó 2. (második) napján.---------

Dr. Keresztesi Ella közjegyző Budapest

Dr. Keresztesi Ella
budapesti közjegyző

ÖTÖDIK NYILATKOZAT — FIFTH STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), a fizikai rendszerekre, mozgásokra és kölcsönhatásokra vonatkozó elméleteimmel kapcsolatos szerzői jogaim védelme céljából hét nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my theories concerning the physical systems, motions and interactions I present seven statements to the notary public for its being certainly dated:

I set up my physical theory entitled Classical inductive general law of motion in January-February, 2007. The content of the second part of its text is the following:

(Continuation from the Fourth Statement) / Therefore, in this theoretical course, it is reasonable a re-interpretation of the unit of measure of the force bringing about the acceleration of the electric charges: / ($[F_F] = [C\ m / s^2] = [Franklin] = [Fn]$) $\Leftrightarrow$ ($[E_F] = [Fn / C] = [m / s^2]$) (3), / in which: F_F — the Franklin force, [C m / s^2], / E_F — the acceleration intensity of the electric field, [m / s^2]. / The Franklin force may be defined as a force bringing about the acceleration of an electric charge and is quantitatively expressed in Franklin. / It can be seen from (3) that by means of making natural the unit of measure of the force bringing about the acceleration of the electric charges, the unit of measure of the intensity of the electric field becomes the same with the unit of measure of the intensity of the gravitational field. As the gravitational field is the rectilinear acceleration field of the masses, in that manner the electrostatic field can be considered to be the rectilinear acceleration field of the electric charges. / 1.3) Electric impulse and law of the rectilinear motion of the electric charges / If X disposes of an electric charge q_X and is surrounded by an electrostatic field of external origin, the expression of the electric Franklin force exerted on it; / $F_F = q_X E_F$ (4), / in which: q_X — the electric charge of X, [C]. / On the basis of a vectorial analysis of the behavior of the electric charges in electrostatic field, the following vectorial expressions can be established: / ($q_X > 0$) $\Leftrightarrow$ ($E_{FR} = a_{ER} = a_{XER}$) (5), / ($q_X < 0$) $\Leftrightarrow$ ($E_{FR} = a_{ER} = - a_{XER}$) (6), / in which: a_{ER} — the vector of the intensity of the electrostatic field as electric rectilinear acceleration field, [m / s^2], / a_{XER} — the vector of the electric rectilinear acceleration of X, [m / s^2]. / The impulse of the electric charge of X can be defined similarly to the impulse of the mass: / $p_{XE} = q_X v_X$ (7), / in which: p_{XE} — the electric impulse of X, [C m / s]. / On the basis of a vectorial analysis of the rectilinear motion of the electric charges, as well as of (4) – (7): / ($q_X > 0$) $\Leftrightarrow$ ($F_{FR} = q_X a_{XER} = q_X dv_{XR} / dt = dp_{XER} / dt$) (8), / ($q_X < 0$) $\Leftrightarrow$ ($F_{FR} = - q_X a_{XER} = - q_X dv_{XR} / dt = - dp_{XER} / dt$) (9), / in which: F_{FR} — the rectilinear Franklin force exerted on X, [Fn], / dv_{XR} — the rectilinear variation of the velocity of X, [m / s], / dp_{XER} — the rectilinear variation of the electric impulse of X, [C m / s]. / 1.4) The magnetic field as centripetal acceleration field / On the basis of (3), the units of measure of the magnetic permeability of the vacuum, as well as of the intensity of the induction of the magnetic field: / ($[F_F] = [Fn]$) $\Leftrightarrow$ ($[\mu_{0F}] = [Fn / A^2] = [m / C]$) $\Leftrightarrow$ ($[B_F] = [s^{-1}]$) (10). / If X is surrounded by a uniform magnetic field, the vectorial expression of the magnetic Franklin force exerted on it is given by the law of Lorentz: / $F_F = q_X v_X \times B_F$ (11). / On the basis of (10) and (11), the vectorial product $v_X \times B_F$ can physically be interpreted for a centripetal acceleration and B_F for an angular velocity. As such, B_F brings about the centripetal acceleration of the electric charges. / 1.5) Law of the uniform circular motion of the electric charges / On the basis of a vectorial analysis of the behavior of the electric charges in magnetic field, as well as of (11), the following vectorial relations can be established: ($q_X > 0$) $\Leftrightarrow$ ($v_X \times B_F = v_X \times \omega_B = a_{EC} = \omega_X \times v_X = a_{XEC}$ (12), / ($q_X < 0$) $\Leftrightarrow$ ($v_X \times B_F = v_X \times \omega_B = a_{EC} = - \omega_X \times v_X = - a_{XEC}$ (13), / in which: ω_B — the vector of the angular velocity of the magnetic induction, [rad / s], / a_{EC} — the vector of the intensity of the magnetic field as electric centripetal acceleration field, [m / s^2], / ω_X — the vector of the angular velocity of X, [rad / s], / a_{XEC} — the vector of the electric centripetal acceleration of X, [m / s^2]. / On the basis of a vectorial analysis of the uniform circular motion of the electric charges, as well as of (11) – (13): / ($q_X > 0$) $\Leftrightarrow$ ($F_{FC} = q_X \omega_X \times v_X = q_X a_{XEC} = q_X dv_{XC} / dt = dp_{XEC} / dt$) (14), / ($q_X < 0$) $\Leftrightarrow$ ($F_{FC} = - q_X \omega_X \times v_X = - q_X a_{XEC} = - q_X dv_{XC} / dt = - dp_{XEC} / dt$) (15), / in which: F_{FC} — the vector of the centripetal Franklin force exerted on X, [Fn], / dv_{XC} — the vector of the centripetal variation of the velocity of X, [m / s], / dp_{XEC} — the vector of the centripetal variation of the electric impulse of X, [C m / s]. / Or: / ($q_X > 0$) $\Leftrightarrow$ ($F_{FC} = q_X \omega_X^2 r = q_X v_X^2 / r = q_X dv_{XC} / dt = dp_{XEC} / dt$) (16), / ($q_X < 0$) $\Leftrightarrow$ ($F_{FC} = - q_X \omega_X^2 r = - q_X v_X^2 / r = - q_X dv_{XC} / dt = - dp_{XEC} / dt$) (17). / 1.6) The electric field as tangential acceleration field / If X is found on a circular trajectory with the radius r, which encircles a magnetic field variable in its measure in time, the expression of the intensity of the electric circular field acting on X results from the electromagnetic-induction law of Faraday: / $E = - (1 / 2 \pi r) d\Phi_B / dt$ (18). / (The continuation in the Sixth Statement).

Dátum / Date: 2007, Február 15. / February 15, 2007. Aláírás / Signature: Adorján

HITELESÍTÉS A TÚLOLDALON!

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1538/2007. ügyszám

Alulírott budapesti közjegyző tanúsítom, hogy ezt a túloldali okiratot----------
Adorján István (született: Calugareni, 1959. december 20., [redacted] ampolgár), aki személya[redacted] kellőképpen igazolta, előttem saját kezűleg írta alá.----------
Kelt, Budapesten 2007. (kettőezer-hetedik) év március hó 2. (második) napján.---------

Dr. Keresztesi Ella közjegyző Budapest

Dr. Keresztesi Ella
budapesti közjegyző

HATODIK NYILATKOZAT — SIXTH STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), a fizikai rendszerekre, mozgásokra és kölcsönhatásokra vonatkozó elméleteimmel kapcsolatos szerzői jogaim védelme céljából hét nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my theories concerning the physical systems, motions and interactions I present seven statements to the notary public for its being certainly dated:

I set up my physical theory entitled Classical inductive general law of motion in January-February, 2007. The content of the third part of its text is the following:

(Continuation from the Fifth Statement) / The natural units of measure of the magnetic flux inside the circle with the radius r, Φ_{BF}, as well as of the tangential acceleration intensity of the electric circular field, E_{FT} result from (3) and (18): / $([F_F] = [Fn]) \Leftrightarrow ([\Phi_{BF}] = [m^2 / s]) \Leftrightarrow ([E_{FT}] = [m / s^2])$ (19). / 1.7) Law of the accelerated circular motion of the electric charges / On the basis of a vectorial analysis of the behavior of the electric charges in electric circular field, as well as of (18), the following vectorial expressions can be established: / $(q_X > 0) \Leftrightarrow (E_{FT} = a_{ET} = r \times \alpha_B = \alpha_X \times r = a_{XET})$ (20), / $(q_X < 0) \Leftrightarrow (E_{FT} = a_{ET} = - r \times \alpha_B = - \alpha_X \times r = - a_{XET})$ (21), / in which: a_{ET} — the vector of the intensity of the electric circular field as electric tangential acceleration field, [m / s^2], / α_B — the vector of the angular acceleration of the magnetic induction, [rad / s^2], / α_X — the vector of the angular acceleration of X, [rad / s^2], / a_{XET} — the vector of the electric tangential acceleration of X, [m / s^2]. / On the basis of a vectorial analysis of the accelerated circular motion of the electric charges, as well as of (4), (20) and (21): / $(q_X > 0) \Leftrightarrow (F_{FT} = q_X \alpha_X \times r = q_X a_{XET} = q_X dv_{XT} / dt = dp_{XET} / dt)$ (22), / $(q_X < 0) \Leftrightarrow (F_{FT} = - q_X \alpha_X \times r = - q_X a_{XET} = - q_X dv_{XT} / dt = - dp_{XET} / dt)$ (23), / in which: F_{FT} — the vector of the tangential Franklin force exerted on X, [Fn], / dv_{XC} — the vector of the tangential variation of the velocity of X, [m / s], / dp_{XET} — the vector of the tangential variation of the electric impulse of X, [C m / s]. / 1.8) Classical inductive general law of motion / On the basis of (1), (2), (8), (9), (14) – (17), (22) and (23): / $(q_X > 0) \Leftrightarrow (F = q_X a_X = q_X dv_X / dt = dp_X / dt)$ (24), / $(q_X < 0) \Leftrightarrow (F = - q_X a_X = - q_X dv_X / dt = - dp_X / dt)$ (25), / in which: F — the force exerted on X, [U m / s^2], / q_X — the charge of X, [U], / a_X — the acceleration of X, [m / s^2], / p_X — the impulse of X, [U m / s]. / 2) Consequences / 2.1) Hypothetical principle of the symmetry of charges, fields, motions, motional directions and motion laws / (a) Each physical system can be brought down to types of charge; each type of charge is of dichotomic character, which can be mathematically expressed with the signs plus and minus; / (b) the forms of charge with different signs of the same type of charge bring into existence different fields; / (c) each form of physical motion can be brought down to rectilinear and circular motions; each type of charge can effect both rectilinear and circular motions; each type of charge is source of specific fields capable of bringing about the rectilinear, centripetal, and, respectively, tangential accelerations of its own forms of charge; / (d) both the rectilinear and circular motions can proceed in two opposite directions; / (e) to each form of charge of the same type of charge, a motion law corresponds, having the same sign with the sign of the respective form of charge. / 2.2) The mass as hypothetical gravitational charge / According to the principle (a), as well as to (24) and (25), the mass can be considered gravitational charge, of which positive form is the mass of matter, the negative form the mass of anti-matter. / On the basis of the principles (b) and (c), as the fields capable of bringing about the rectilinear acceleration of the electric charges are the electrostatic fields, in that manner the positive and negative masses, namely the positive and negative gravitational charges are sources of the gravitational fields capable of bringing about their rectilinear acceleration. / Conforming to the principle (d), for both the approach and removal of the masses, namely gravitational charges, two motions with opposite directions are necessary. / According to the principle (b) and (e), as well as to (24) and (25), the gravitational fields exert opposite actions to matter and anti-matter masses, namely positive and negative gravitational charges. / 2.3) Gravitational impulse and hypothetical law of the rectilinear motion of the gravitational charges / If X is surrounded by a gravitational field of external origin, the expression of the Newton force exerted on it: / $F_N = m_X g = q_{XG} g$ (26), / in which: F_N — the Newton force exerted on X, [N], / q_{XG} — the gravitational charge of X, [kg]. / On the basis of a vectorial analysis of the behavior of the matter mass as positive gravitational charge in gravitational field, as well as of the hypotheses relative to the anti-matter mass as negative gravitational charge, the following vectorial expressions can be written: / $(q_X > 0) \Leftrightarrow (g = a_{GR} = a_{XGR})$ (27), / $(q_X < 0) \Leftrightarrow (g = a_{GR} = - a_{XGR})$ (28), / in which: a_{GR} — the vector of the intensity of the gravitational field as gravitational rectilinear field, [m / s^2], / a_{XGR} — the vector of the gravitational rectilinear acceleration of X, [m / s^2]. / On the basis of the point (2.2), the impulse of the mass may be termed *gravitational impulse* and its expression may be written as follows: / (The continuation in the Seventh Statement)

Dátum / Date: 2007, Február 15. / February 15, 2007.

Aláírás / Signature: Adorján

HITELESÍTÉS A TÚLOLDALON

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1539/2007. ügyszám

Alulírott budapesti közjegyző tanúsítom, hogy ezt a túloldali okiratot----------
Adorján István (született: Calugareni, 1959. december 20., [redacted] ampolgár), aki személya[redacted] kellőképpen igazolta, előttem saját kezűleg írta alá.----------
Kelt, Budapesten 2007. (kettőezer-hetedik) év március hó 2. (második) napján.---------

Dr. Keresztesi Ella közjegyző Budapest

Dr. Keresztesi Ella
budapesti közjegyző

HETEDIK NYILATKOZAT — SEVENTH STATEMENT

Alulírott Adorján István, román állampolgár, született 1959. december 20-án a romániai Mikházán (Călugăreni), a fizikai rendszerekre, mozgásokra és kölcsönhatásokra vonatkozó elméleteimmel kapcsolatos szerzői jogaim védelme céljából hét nyilatkozatot terjesztek közjegyző elé biztos dátummal való ellátás végett:

The undersigned István Adorján, Romanian citizen, born on December 20, 1959 in Călugăreni, Romania, with a view to protect the copyright in respect of my theories concerning the physical systems, motions and interactions I present seven statements to the notary public for its being certainly dated:

I set up my physical theory entitled Classical inductive general law of motion in January-February, 2007. The content of the fourth part of its text is the following:

(Continuation from the Sixth Statement) / $p_{XG} = m_X v_X = q_{XG} v_X$ (29), / in which: p_{XG} — the gravitational impulse of X, [kg m / s]. / On the basis of a vectorial analysis of the rectilinear motion of the gravitational charges, as well as of (24) – (27): / $(q_X > 0) \Leftrightarrow (F_{NR} = q_{XG} a_{XGR} = q_{XG} dv_{XR} / dt = dp_{XGR} / dt)$ (30), / $(q_X < 0) \Leftrightarrow (F_{NR} = - q_{XG} a_{XGR} = - q_{XG} dv_{XR} / dt = - dp_{XGR} / dt)$ (31), / in which: F_{NR} — the rectilinear Newton force exerted on X, [N], / dp_{XGR} — the rectilinear variation of the gravitational impulse of X, [kg m / s]. / 2.4) Hypothetical circular motions of the gravitational charges / According to the principle (c), the circular motion cannot be excluded from the order of the interactions of masses, the gravitational charges must be sources of the gravitational circular fields capable of bringing about the centripetal, and, respectively, tangential accelerations of those charges. On the basis of the similarity between the electrostatic and gravitational — gravitostatic — fields, it is presumable that the gravitational circular fields resemble the electromagnetic circular fields. / Accordingly, it is presumable that — similarly to the laws of Ampère and Maxwell, as well as of Biot and Savart — the moving gravitational charges or the gravitational rectilinear or tangential fields, variable in their measures in time, bring about gravitational centripetal fields, which are capable of bringing in uniform circular motion other gravitational charges being in motion with gravitational centripetal forces. Further, it is presumable that — similarly to the electromagnetic-induction law of Faraday — the gravitational centripetal fields variable in their measures in time, bring about gravitational tangential fields, which are capable of bringing in accelerated circular motion other gravitational charges with gravitational tangential forces. / 2.5) Classification of the interaction fields / Depending on the type of their accelerating effects, it may be distinguished rectilinear, centripetal and tangential fields. Accordingly, as regards the interactions of the electric charges, the electrostatic field may be termed electric rectilinear field, the magnetic field electric centripetal field and the electric circular field electric tangential field. / 2.6) The ratio of the Franklin and Newton forces / The acceleration of electric charges also means the acceleration of gravitational charges. In the case of the force F exerted on the particle X, the acceleration of the electric charge q_{XE} can be considered quantitatively identical with the acceleration of the gravitational charge q_{XG}. / The ratios of the electric and gravitational charges of the particles are variable. For this reason, the ratios of the Franklin and Newton forces exerted on X vary regularly from a particle to another: / $(q_{XE} > 0$ and $q_{XG} > 0) \Leftrightarrow (q_{XE} / q_{XG} = q_{XE} a_X / q_{XG} a_X = F_F / F_N)$ (32). / 2.7) The electrokinetic energy / The forces bringing about the rectilinear or tangential accelerations of the electric charges effect work-function on the electric charges as well. On the basis of (8): / $W_{E+} = \int F_F dx = \int q_{XE} a_{XE} dx = q_{XE} \int (dv_X / dt) dx = q_{XE} \int (dv_X / dx) (dx / dt) dx = q_{XE} \int v_X dv_X = q_{XE} (v_X^2 - v_{X0}^2) / 2$ (33), / in which: W_{E+} — the electric work-function effected by F_F on a positive electric charge, [Fn m]. / On the basis of (9), similarly: / $W_{E-} = \int F_F dx = \int (- q_{XE} a_{XE}) dx = - q_{XE} (v_X^2 - v_{X0}^2) / 2$ (34). / On the basis of (33) and (34), the electrokinetic energies of the positive, and, respectively, negative electric charges may be defined as follows: / $T_{E+} = q_{XE} v_X^2 / 2$ (35) and $T_{E-} = - q_{XE} v_X^2 / 2$ (36), / in which: T_{E+} and T_{E-} — the electrokinetic energies of the positive, and, respectively, negative electric charges, [Fn m]. / 2.8) The moment of the tangential Franklin force, the electric momentum and the law of the accelerated circular motion of the electric charges / In the case of the accelerated circular motion of X, the moment of the tangential Franklin force exerted on X can be defined: / $M_F = r \times F_{FT}$ (37), / in which: M_F — the vector of the moment of the tangential Franklin force exerted on X, [Fn m]. / Further, the electric momentum can be defined: / $l_{XF} = r \times p_{XE} = r \times q_{XE} v_X = q_{XE} r^2 \omega_X = I_{XF} \omega_X$ (38), / in which: l_{XF} — the vector of the electric momentum of X, [C m² / s], / I_{XF} — the electric inertia of X, [C m²]. / On the basis of (22), (23), (37) and (38), the law of the accelerated circular motion of the electric charges: / $(q_{XE} > 0) \Leftrightarrow (M_F = I_{XF} \alpha_X = I_{XF} d\omega_X / dt = dl_{XF} / dt)$ (39), / $(q_{XE} < 0) \Leftrightarrow (M_F = - I_{XF} \alpha_X = - I_{XF} d\omega_X / dt = - dl_{XF} / dt)$ (40).

Dátum / Date: 2007, Február 15. / February 15, 2007.

Aláírás / Signature: Adorján

HITELESÍTÉS A TÚLOLDALON

1540/2007. ügyszám

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Alulírott budapesti közjegyző tanúsítom, hogy ezt a túloldali okiratot----------
Adorján István (született: Calugareni, 1959. december 20., [redacted] állampolgár), aki személyazonosságát [redacted] kellőképpen igazolta, előttem saját kezűleg írta alá.----------
Kelt, Budapesten 2007. (kettőezer-hetedik) év március hó 2. (második) napján.---------

Dr. Keresztesi Ella közjegyző Budapest

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2.2. Manuscripts

2.2.1. General theory of the physical systems

2.2.1.1. The paper manuscript of the article of the first stage

CONTRIBUTIONS TO A GENEARAL THEORY OF THE PHYSICAL SYSTEMS

A) Definitions

1) World: The world is as it unfolds itself in front of the humans through their senses, experiments and sciences.

2) Physical system: Any senseless object of the world is a physical system.

B) Enunciations

1) Structure: The concrete values of the variable physical quantities characterizing a physical system are given by the interactions among the finite number of physical elements composing it.

2) Organization: The physical systems are organized in levels of organization through interactions. An element of a physical system of the n-th level of organization is a physical system of the $(n-1)$-th level of organization. A physical system of the n-th level of organization is a physical element of the $(n+1)$-th level of organization.

3) Directions of organization: The direction of organization inside of a given level of organization is the horizontal direction of organization. The direction of organization between the levels of organization is the vertical direction of organization.

4) Horizontal arrangeability: On the basis of the definitions formulated by the physical sciences or other criteria the physical systems can horizontally be arranged in classes of physical systems.

5) Vertical arrangeability: On the basis of their structure and vertical organization the classes the physical systems can be vertically arranged in the levels of organization of the physical systems.

6) Horizontal limitedness: On any level of organization of the physical systems there characteristically is a smallest real value each, in modulus, under which cannot sink, and a biggest real value each, in modulus, respectively, above which cannot rise the values of the variable physical quantities characterizing the classes of physical systems of the respective level of organization.

7) Vertical unlimitedness: The variable physical quantities characterizing the classes of physical systems can vertically take up values from the R-{0} real-number interval without lower and upper limitedness.

8) **The zero:** The variable physical quantities characterizing the classes of physical systems cannot take up zero for a value. The zero is a symbol of the non-existence and the symmetry of the variable physical quantities characterizing the classes of physical systems.

C) Corroborations

1) The physical world concept: According to the present knowledge the physical systems are organized in the main levels of organization of "elementary" particles, atoms, molecules, macroscopic bodies, celestial bodies, galaxies and clusters of galaxies. For example, in the vertical direction of organization: the carbon atom is composed of a nucleus and twelve electrons; the nucleus is an element of the class and level of organization of nuclei, it is regularly composed of six protons and six neutrons; the carbon atom is an element of the class and level of organization of hydrocarbons. In the horizontal level of organization: the level of organization of the carbon atom — the level of organization of the atoms — includes the class of the relatively stable atoms as the smallest components of the chemical "elements", from hydrogen to hahnium..

2) The distance between proton and electron. In the solving Ψ 100 of the Schrödinger's equation for the hydrogen atom, for R=0 the center of the nucleus — the symmetry point of the atom — appears as being the most probable place of the electron.

3) The mathematical zero. It is a mathematical axiom that zero has no reverse, in many physical cases it leads to an absurd result, it must be cleared away from the domain of definition. The zero symmetrically divides in two the coordinate axle representing with its infinite heap of points the real-number heap arranged increasingly from left to right into sub-heaps of positive and negative real numbers equal from the point of view of the their reasons for the existence. For example, in electricity the zero constitutes the symmetry point of the positive and negative values of the axle of the electric charges. From the point of view of the reason for the existence there is no difference between the two half-lines.

4) Quanta. In case of the quantified variable physical quantities the quantity quanta themselves exclude the zero and limit in modulus from under the interval of the real values that can be taken up. Usually the physical constants are or can be considered quanta of variable physical quantities.

5) The non-existence of the photons' rest. The rest mass of the photons cannot be zero, because in accordance with the special relativity theory the rest state of the photons does not exist.

6) The unreachableness of the absolute-zero temperature. Resulting from the third principle of thermodynamics the absolute-zero temperature value cannot be reached.

7) Limied horizontal intervals. At the left edge of the limited horizontal interval of atomic mass, obtained by arranging the masses of the relatively stable atoms, the mass of the hydrogen atom, while at its right edge the mass of

the hahnium atom are situated. Heavier atoms can be produced as well, but their lives quickly approach the "length-of-time quantum". Further, on the level of organization of stars the arranged star masses aggregate in a limited horizontal interval which indicate that the probability of discovering stars with masses outside of the interval is very small and decreases with the departure from the interval.

D) Conclusions

1) Building up scales of the physical quantities. On the basis of the present physical concept, with the arrangement of values of the variable physical quantities characterizing the physical systems, horizontal and vertical scales can be built up. The horizontal scales would show from which concrete limited interval of the R-{0} heap the variable physical quantities characterizing the classes of physical systems take up values, which are the smallest and biggest values that can be taken up, between which the given classes of physical systems are relatively stable. On the vertical scales, the intervals of the horizontal scales could be compared, it could be established in what measure they fill in the R-{0} heap. The scales of physical quantities may provide surplus information for the physical research.

2) The effect of Newton's second law. The physical equivalent of the negative half-line of the vertical mass scale is anti-matter. If the mass of matter is positive, the mass of anti-matter is negative. Accordingly, in the formula of force the m is necessary to be replaced with minus m: $F = -m \cdot a$. The universally effective law of force can be written as follows: $F = |m| \cdot a$.

3) The law of universal gravitation and anti-gravitation. In consideration of the product of the two masses, the law of universal gravitation applies to the anti-matter as well. Accordingly, the validity can be extended over the interaction of matter and anti-matter. In this way, on the interaction of a matter body and an anti-matter body, a repelling force comes into being.

4) The heat-radiation spectra of bodies are limited. On the — horizontal — frequency scale of the thermal radiation of bodies, a smallest and a biggest values, respectively, can be determined each, under which and above which, respectively, the emission does not exist.

5) Establishing quanta and units of measure of physical quantities. In consideration of the limitedness of the horizontal scales, on any level of organization the quanta of variable physical quantities of the respective classes of physical systems can be determined, which are characteristic to each class. In this manner, for a variable physical quantity a characteristic natural unit of measure can be determined each, on all levels of organization for all classes of physical systems.

6) The infinity of the "universe". According to the present knowledge the physical systems with the biggest masses and dimensions are the clusters of galaxies. Starting from this, on the basis of the gravitation law it must be accepted the existence of the clusters of clusters of galaxies, namely the clusters of galaxies of second rank, and so on, the level of organization of the clusters of galaxies of N-th rank as well, where N can be whatever big. Consequently, vertically it cannot be determined a biggest mass and dimension.

7) The divisibility of the "elementary" particles. According to the present knowledge the class of physical system characterized by the smallest masses and dimensions is the class of photons. The unlimitedness upwards of the number of levels of organization substantiates the hypothesis of the unlimitedness downwards of the number of those. According to this the "elementary" particles are divisible.

8) The vertical unlimitedness of the variable physical quantities. It results from the vertical infinity, in both directions of organization of the physical systems, that the absolute values of the variable physical quantities characterizing them can be limited only by the zero from under and only by the infinite from above, namely they are unlimited: they can take up values from the interval $R-\{0\}$ without lower and upper limitedness.

9) The negation of the big-bang hypothesis. The vertical infinity of the physical systems means not only spatial, but also temporal infinity. According to this, it is to be expected that the telescopes will explore about the period before the hypothetical big-bang an image similar to the image of the cosmic space visible at present.

2.2.1.2. The electronic manuscript of the article of the second stage

CONTRIBUTIONS TO A GENERAL THEORY OF THE PHYSICAL SYSTEMS

A) Definitions

1) World: The world is as it unfolds itself in front of the humans through their senses, experiments and sciences.

2) Physical system: Any senseless object of the world is a physical system.

B) Principles

1) Structure: The concrete values of the variable physical quantities characterizing a physical system are given by the interactions among the finite number of physical elements composing it.

2) Organization: The physical systems are organized in levels of organization through interactions. An element of a physical system of the n-th level of organization is a physical system of the $(n - 1)$-th level of organization. A physical system of the n-th level of organization is a physical element of the $(n + 1)$-th level of organization.

3) Directions of organization: The direction of organization inside of a given level of organization is the horizontal direction of organization. The direction of organization between the levels of organization is the vertical direction of organization.

4) Horizontal arrangeability: On the basis of the definitions formulated by the physical sciences or other criteria the physical systems can horizontally be arranged in classes of physical systems.

5) Vertical arrangeability: On the basis of their structure and vertical organization the classes the physical systems can be vertically arranged in the levels of organization of the physical systems.

6) Horizontal limitedness: On any level of organization of the physical systems there characteristically is a smallest real value each, in modulus, under which cannot sink, and a biggest real value each, in modulus, respectively, above which cannot rise the values of the variable physical quantities characterizing the classes of physical systems of the respective level of organization.

7) Vertical unlimitedness: The variable physical quantities characterizing the classes of physical systems can vertically take up values from the R-{0} real-number heap without lower and upper limitedness.

8) **The zero:** The variable physical quantities characterizing the classes of physical systems cannot take up zero for a value. The zero is a symbol of the non-existence and the symmetry of the variable physical quantities characterizing

the classes of physical systems.

C) Corroborations

1) The physical world concept: According to the present knowledge the physical systems are organized in the main levels of organization of "elementary" particles, atoms, molecules, macroscopic bodies, celestial bodies, galaxies and clusters of galaxies. For example, in the vertical direction of organization: the graphite is formed by sheets composed of carbon atoms organized in regular hexagons, which are elements of the class and level of organization of molecules; the carbon atoms of the sheets are elements of the class and level of organization of atoms; as a rock the graphite is an element of the lithosphere, a constituting element of the Earth planet. In the horizontal direction of organization: as a material drawn into the social use the graphite is an element of the class and level of organization of the macroscopic bodies.

2) Limited horizontal intervals. At the left edge of the limited horizontal interval of atomic mass, obtained by arranging the masses of the relatively stable atoms, the mass of the hydrogen atom, while at its right edge the mass of the hahnium atom are situated. Further, on the level of organization of stars the arranged star masses aggregate in a limited horizontal interval which indicate that the probability of discovering stars with masses outside of the interval is very small and decreases with the departure from the interval.

3) The strong interaction. In case of the strong interaction it can be established a maximum distance

of interaction.

4) <u>The collision.</u> Having defined the collision as the getting into immediate physical touch with each other of two bodies, generally it can be established both a minimum and a maximum collision distance between the mass centers of two concrete bodies colliding with each other. In case of the spherical rigid, ideal body the minimum and the maximum collision distances coincide.

5) <u>The dimension of the hydrogen atom.</u> In the Bohr model of the hydrogen atom the minimum distance between the proton and the electron is 0.529 Å. In the spectrum the upper frequency limit-lines and the continuous sections following them prove that the maximum ray of the hydrogen atom is finite and it cam be established.

6) <u>Quanta.</u> In case of the quantified variable physical quantities the quantity quanta themselves exclude the zero and limit in modulus from under the interval of the real values that can be taken up. Some physical constants are or can be considered quanta of variable physical quantities.

7) <u>The mathematical zero.</u> It is a mathematical axiom that zero has no opposite and reverse. In many physical cases it leads to an absurd result, it must be cleared away from the domain of definition. The zero symmetrically divides in two the co-ordinate axle representing with its infinite heap of points the real-number heap arranged increasingly from left to right into sub-heaps of positive and negative real numbers equal from the point of view of the their reasons for the existence. For example, in electricity the zero constitutes the symmetry point of the positive and negative values of the axle of the electric charges. From the point of view of the reason for the existence there is no difference between the two half-lines.

8) <u>The non-existence of the photons' rest.</u> The interpretation of the zero rest mass of the photons is given by the special relativity theory by excluding the existence of the rest state of the photons.

9) <u>The unreachableness of the absolute-zero temperature.</u> Resulting from the third principle of thermodynamics

the absolute-zero temperature value cannot be reached.

D) Conclusions

1) Building up scales of the physical quantities. On the basis of the present physical concept, with the arrangement of values of the variable physical quantities characterizing the physical systems, horizontal and vertical scales can be built up. The horizontal scales would show from which concrete limited interval of the R-{0} heap the variable physical quantities characterizing the classes of physical systems take up values, which are the smallest and biggest values that can be taken up, between which the given classes of physical systems are relatively stable. On the vertical scales, the intervals of the horizontal scales could be compared, it could be established in what measure they fill in the R-{0} heap. The scales of physical quantities may provide surplus information for the physical research.

2) The effect of Newton's second law. The physical equivalent of the negative half-line of the vertical mass scale is anti-matter. If the mass of matter is positive, the mass of anti-matter is negative. Accordingly, in the formula of force the m is necessary to be replaced with minus m:

$$F = - m \cdot a.$$

The universally effective law of force can be written as follows:

$$F = |m| \cdot a.$$

3) The law of universal gravitation and anti-gravitation. In consideration of the product of the two masses, the law of universal gravitation applies to the anti-matter as well. Accordingly, the validity can be extended over the interaction of matter and anti-matter. In this way, on the interaction of a matter body and an anti-matter body, a repelling force comes into being.

4) The finite radii of action of the electric and gravitational forces. In the cases of the electromagnetic and the gravitational interactions it can as well be established such maximum distances, beyond which the electromagnetic and the gravitational interactions, respectively, cease to

exist between two concrete bodies. Having defined the interaction flux as that part of the flux of the source body, with which it acts onto the body being in interaction with it, and its minimal value, respectively, as that, which can still or already be detected experimentally, the formulas fit for calculating the maximum electric and, respectively, gravitational interaction distances between the X and Y spherical bodies, with the rays r_X and r_Y , respectively, can be supplied:

$$d_M = 1/2\ (\Phi_X / \Phi_{Xm}^*)^{½}\ r_Y = 1/2\ (\Phi_Y / \Phi_{Ym}^*)^{½}\ r_X,$$

in which: Φ_X and Φ_Y — the electric or gravitational interaction fluxes produced by X and Y, respectively,

Φ_{Xm}^* and Φ_{Ym}^* — the minimum electric or gravitational interaction fluxes produced by X and Y, respectively.

5) <u>The heat-radiation spectra of bodies are limited.</u> On the — horizontal — frequency scale of the thermal radiation of bodies, a smallest and a biggest values, respectively, can be determined each, under which and above which, respectively, the emission does not exist.

6) <u>Establishing quanta and units of measure of physical quantities.</u> In consideration of the limitedness of the horizontal scales, on any level of organization the quanta of variable physical quantities of the respective classes of physical systems can be determined, which are characteristic to each class. In this manner, for a variable physical quantity a characteristic natural unit of measure can be determined each, on all levels of organization for all classes of physical systems.

7) <u>The infinity of the “universe”.</u> According to the present knowledge the physical systems with the biggest masses and dimensions are the clusters of galaxies. Starting from this, on the basis of the gravitation law it must be accepted the existence of the clusters of clusters of galaxies, namely the clusters of galaxies of second rank, and so on, the level of organization of the clusters of galaxies of N-th rank as well, where N can be whatever big. Consequently, vertically it cannot be determined a biggest mass and dimension.

8) <u>The divisibility of the “elementary” particles.</u> According to the present knowledge the class of physical system characterized by the smallest masses and dimensions is the class of photons. The unlimitedness upwards of the number of levels of organization substantiates the hypothesis of the unlimitedness downwards of the number of those. According to this the “elementary” particles are divisible.

9) <u>The vertical unlimitedness of the variable physical quantities.</u> It results from the vertical infinity, in both directions of organization of the physical systems, that the absolute values of the variable physical quantities characterizing them can be limited only by the zero from under and only by the infinite from above, namely they are unlimited: they can take up values from the heap R-{0} without lower and upper limitedness.

10) <u>The negation of the big-bang hypothesis.</u> The vertical infinity of the physical systems means not only spatial, but also temporal infinity. According to this, it is to be expected that the telescopes will explore about the period before the hypothetical big-bang an image similar to the image of the cosmic space visible at present.

2.2.1.3. The electronic manuscript of the article of the third stage

CONTRIBUTIONS TO A GENERAL THEORY OF THE PHYSICAL SYSTEMS

1) Definitions

1.1) World: The world is as it unfolds itself in front of the humans through their senses, experiments and sciences.

1.2) Physical system: Any senseless object of the world is a physical system.

2) Principles

2.1) Structure: The concrete values of the variable physical quantities characterizing a physical system are given by the interactions among the finite number of physical elements composing it.

2.2) Organization: The physical systems are organized in levels of organization through interactions. An element of a physical system of the n-th level of organization is a physical system of the $(n - 1)$-th level of organization. A physical system of the n-th level of organization is a physical element of the $(n + 1)$-th level of organization.

2.3) Directions of organization: The direction of organization inside of a given level of organization is the horizontal direction of organization. The direction of organization between the levels of organization is the vertical direction of organization.

2.4) Horizontal arrangeability: On the basis of the definitions formulated by the physical sciences or other criteria the physical systems can horizontally be arranged in classes of physical systems.

2.5) Vertical arrangeability: On the basis of their structure and vertical organization the classes the physical systems can be vertically arranged in the levels of organization of the physical systems.

2.6) Horizontal limitedness: On any level of organization of the physical systems there characteristically is a smallest real value each, in modulus, under which cannot sink, and a biggest real value each, in modulus, respectively, above which cannot rise the values of the variable physical quantities characterizing the classes of physical systems of the respective level of organization.

2.7) <u>Vertical unlimitedness</u>: The variable physical quantities characterizing the classes of physical systems can vertically take up values from the R-{0} real-number heap without lower and upper limitedness.

2.8) **<u>The zero</u>:** The variable physical quantities characterizing the classes of physical systems cannot take up zero for a value. The zero is a symbol of the non-existence and the symmetry of the variable physical quantities characterizing

the classes of physical systems.

3) <u>Corroborations</u>

3.1) <u>The physical world concept</u>: According to the present knowledge the physical systems are organized in the main levels of organization of “elementary” particles, atoms, molecules, macroscopic bodies, celestial bodies, galaxies and clusters of galaxies. For example, in the vertical direction of organization: the graphite is formed by sheets composed of carbon atoms organized in regular hexagons, which are elements of the class and level of organization of molecules; the carbon atoms of the sheets are elements of the class and level of organization of atoms; as a rock the graphite is an element of the lithosphere, a constituting element of the Earth planet. In the horizontal direction of organization: as a material drawn into the social use the graphite is an element of the class and level of organization of the macroscopic bodies.

3.2) <u>Limited horizontal intervals.</u> At the left edge of the limited horizontal interval of atomic mass, obtained by arranging the masses of the relatively stable atoms, the mass of the hydrogen atom, while at its right edge the mass of the hahnium atom are situated. Further, on the level of organization of stars the arranged star masses aggregate in a limited horizontal interval which indicate that the probability of discovering stars with masses outside of the interval is very small and decreases with the departure from the interval.

3.3) <u>The strong interaction.</u> In case of the strong interaction it can be established a maximum distance

of interaction.

3.4) <u>The collision.</u> Having defined the collision as the getting into immediate physical touch with each other of two bodies, generally it can be established both a minimum and a maximum collision distance between the mass centers of two concrete bodies colliding with each other. In case of the spherical rigid, ideal body the minimum and the maximum collision distances coincide.

3.5) <u>The dimension of the hydrogen atom.</u> In the Bohr model of the hydrogen atom the minimum distance between the proton and the electron is 0.529 Å. In the spectrum the upper frequency limit-lines and the continuous sections following them prove that the maximum ray of the hydrogen atom is finite and it cam be established.

3.6) <u>Quanta.</u> In case of the quantified variable physical quantities the quantity quanta themselves exclude the zero and limit in modulus from under the interval of the real values that can be taken up. Some physical constants are or can be considered quanta of variable physical quantities.

3.7) <u>The mathematical zero.</u> It is a mathematical axiom that zero has no opposite and reverse. In many physical cases it leads to an absurd result, it must be cleared away from the domain of definition. The zero symmetrically divides in two the co-ordinate axle representing with its infinite heap of points the real-number heap arranged increasingly from left to right into sub-heaps of positive and negative real numbers equal from the point of view of the their reasons for the existence. For example, in electricity the zero constitutes the symmetry point of the positive and negative values of the axle of the electric charges. From the point of view of the reason for the existence there is no difference between the two half-lines.

3.8) <u>The non-existence of the photons' rest.</u> The interpretation of the zero rest mass of the photons is given by the special relativity theory by excluding the existence of the rest state of the photons.

3.9) <u>The unreachableness of the absolute-zero temperature.</u> Resulting from the third principle of thermodynamics

the absolute-zero temperature value cannot be reached.

4) Conclusions

4.1) Building up scales of the physical quantities. On the basis of the present physical concept, with the arrangement of values of the variable physical quantities characterizing the physical systems, horizontal and vertical scales can be built up. The horizontal scales would show from which concrete limited interval of the R-{0} heap the variable physical quantities characterizing the classes of physical systems take up values, which are the smallest and biggest values that can be taken up, between which the given classes of physical systems are relatively stable. On the vertical scales, the intervals of the horizontal scales could be compared, it could be established in what measure they fill in the R-{0} heap. The scales of physical quantities may provide surplus information for the physical research.

4.2) The effect of Newton's second law. The physical equivalent of the negative half-line of the vertical mass scale is anti-matter. If the mass of matter is positive, the mass of anti-matter is negative. Accordingly, in the formula of force the m is necessary to be replaced with minus m:

$$F = - m \cdot a \qquad (1),$$

in which: F — the force acting on the anti-matter body, [N],

m — the mass of the anti-matter body, [kg],

a — the acceleration of the anti-matter body, [m / s^2].

4.3) The law of universal gravitation and anti-gravitation. In the case of the bodies X and Y, with the masses m_X and m_Y, being at a big distance r from each other, the gravitational law of Newton vectorially:

$$\mathbf{F_X} = - (G\, m_X\, m_Y / r^3)\, \mathbf{r_Y} \qquad (2) \qquad \text{and} \qquad \mathbf{F_Y} = - (G\, m_X\, m_Y / r^3)\, \mathbf{r_X} \qquad (3),$$

in which: $\mathbf{F_X}$ — the vector of the gravitational force exerted by X on Y, [N],

$\mathbf{F_Y}$ — the vector of the gravitational force exerted by Y on X, [N],

$\mathbf{r}_X$ — the position vector of X to Y, [m],

$\mathbf{r}_Y$ — the position vector of Y to X, [m],

G — the constant of Newton, [N m^2 / kg^2].

According to this law, if X and Y are anti-matter bodies — m_X and m_Y being negative — the forces acting between them are attractive, just as in case of the matter bodies. If only X or only Y are anti-matter bodies, the forces are repelling. Accordingly, the scalar form of Newton's gravitational law remains valid, with the exception of two cases, when it must be marked with the negative sign:

$$(m_X < 0 \quad \text{or} \quad m_Y < 0) \Rightarrow F = - G\, m_X\, m_Y / r^2 \qquad (4).$$

These theoretical results correspond to the anti-symmetrical relation between the electrostatic and the gravitational interactions suggested by the experimental results as well. On the basis of these, the universality of Newton's gravitational law can be supported.

4.4) <u>The impulse of the anti-matter.</u>

$$F = dp / dt = - m\, a = - m\, dv / dt \Rightarrow p = - m\, v \qquad (5),$$

in which: p — the impulse of the anti-matter body, [N s],

t — the time, [s],

v — the velocity of the anti-matter body, [m / s].

$$a) \quad v << c \Rightarrow m = m_0 \qquad (6),$$

$$b) \quad v \sim c \Rightarrow m = m_0 \, (1 - v^2 / c^2)^{-1/2} \qquad (7),$$

in which: m_0 — the rest mass of the anti-matter body, [kg],

c — the velocity of the light, [m / s].

4.5) <u>The energy of the anti-matter.</u>

$$a) \quad v << c \Rightarrow F = - m\, a = - m\, dv / dt = - m\, (dv / dx)\, (dx / dt) \Rightarrow F\, dx =$$

$$= - m\, v\, dv \Rightarrow W = \int F\, dx = - m \int v\, dv = - m\, (v^2 - v_0^2) / 2 \qquad (8),$$

in which: x — the position of the anti-matter body, [m],

W — the work function exerted by the force F on the anti-matter body, [J].

Considering the theorem of kinetic energy to be valid for the anti-matter as well:

$$W = \Delta T = T - T_0 = (- m v^2 / 2) - (- m v_0^2 / 2) \quad (9),$$

in which: T — the kinetic energy of the anti-matter body, [J].

On the basis of (9), the kinetic energy of the anti-matter:

$$T = - m v^2 / 2 \quad (10).$$

b) $v \sim c \Rightarrow F = dp / dt = - m_0 (d / dt) [v (1 - v^2 / c^2)^{-1/2}] =$

$$= - m_0 (1 - v^2 / c^2)^{-3/2}) (dv / dt) \quad (11),$$

$$W = \int F \, dx = - m_0 \int (1 - v^2 / c^2)^{-3/2} v \, dv = - m_0 c^2 [(1 - v^2 / c^2)^{-1/2} - 1] \quad (12).$$

On the basis of the theorem of kinetic energy:

$$W = T = E - E_0 = [-m_0 c^2 (1 - v^2 / c^2)^{-1/2}] - (- m_0 c^2) = - c^2 \Delta m \quad (13),$$

in which: E — the total energy of the anti-matter body, [J].

On the basis of (13), the rest and, respectively, the total energy of the anti-matter:

$$E_0 = - m_0 c^2 \quad (14) \quad \text{and} \quad E = -m_0 c^2 (1 - v^2 / c^2)^{-1/2}] = - m c^2 \quad (15).$$

4.6) <u>The energetic mass of the anti-matter.</u> In case of the anti-matter:

$$m < m_0 < 0 \Rightarrow \Delta m = [m_0 (1 - v^2 / c^2)^{-1/2} - m_0] < 0 \quad (16).$$

On the basis of (16), generalizing for every form of energy:

$$\Delta m = - W / c^2 = - T / c^2 = - E_{am} / c^2 \quad (17),$$

in which: E_{am} — any energy form of the anti-matter body, [J].

In case of the anti-matter, the principle of equivalence of mass and energy comes across so that any

(positive) energetic effect exerted on the anti-matter increases the mass of the anti-matter in a negative value.

4.7) <u>The photon and the concept of motional mass.</u> As in case of the photon $m_{0\gamma} = 0$ and $v_\gamma = c$, on the basis of (7) $m_\gamma = 0 / 0$, namely the concept of motional mass of the photon cannot be mathematically and physically interpreted. The photon can be absorbed by a particle or an anti-particle and according as the rest masses of those are positive or, respectively, negative, the (positive) energy of the photon metamorphize into a positive and, respectively, negative energetic mass of the pertinent particle or anti-particle, causing positive and, respectively, negative mass differences, on the basis of the formulas below:

$$\Delta m_m = E_\gamma / c^2 = h \nu / c^2 \quad (18) \quad \text{and, respectively,} \quad \Delta m_{am} = - E_\gamma / c^2 = - h \nu / c^2 \quad (19),$$

in which: Δm_m — the mass difference of the matter body caused by the photon absorption, [kg],

Δm_{am} — the mass difference of the anti-matter body caused by the photon absorption, [kg],

E_γ — the energy of the photon, [J],

ν — the frequency of the photon, [Hz],

h — the constant of Planck, [J s].

Otherwise, for example, also in the process of electron-positron pair formation the (positive) energy of the gamma photon doubles into a positive and a negative mass of the same absolute value.

4.8) <u>The needlessness of Dirac's hypothesis of the "densely populated vacuum".</u> In the electron theory of Dirac, the "negative mass dilemma" coming from the negative variant of the relation between energy and impulse — which, on the basis of (14) and (15), cannot physically be accepted — can be solved by accepting the formula (1). Further, on the basis of the consequences of that formula, the electron-positron pair formation can be explained and the arising a newer hypothesis becomes unnecessary. By this means the anti-particles physically become equal in rank with the particles, as

well as their existence and properties become explainable with their own existence and properties.

4.9) <u>The finite radii of action of the electric and gravitational forces.</u> In the cases of the electric and the gravitational interactions it can as well be established such maximum distances, beyond which the electric and the gravitational interactions, respectively, cease to exist between two concrete bodies. Having defined the interaction flux as that part of the flux of the source body, with which it acts onto the body being in interaction with it, and its minimal value, respectively, as that, which can still or already be detected experimentally, the formulas fit for calculating the maximum electric and, respectively, gravitational interaction distances between the X and Y spherical bodies, with the rays r_X and r_Y , respectively, can be supplied:

$$d_M = 1/2\ (\Phi_X / \Phi_{Xm}^*)^{½}\ r_Y = 1/2\ (\Phi_Y / \Phi_{Ym}^*)^{½}\ r_X \qquad (20),$$

in which: Φ_X and Φ_Y — the electric or gravitational interaction fluxes produced by X and Y, respectively,

Φ_{Xm}^* and Φ_{Ym}^* — the minimum electric or gravitational interaction fluxes produced by X and Y, respectively.

4.10) <u>The heat-radiation spectra of bodies are limited.</u> On the — horizontal — frequency scale of the thermal radiation of bodies, a smallest and a biggest values, respectively, can be determined each, under which and above which, respectively, the emission does not exist.

4.11) <u>Establishing quanta and units of measure of physical quantities.</u> In consideration of the limitedness of the horizontal scales, on any level of organization the quanta of variable physical quantities of the respective classes of physical systems can be determined, which are characteristic to each class. In this manner, for a variable physical quantity a characteristic natural unit of measure can be determined each, on all levels of organization for all classes of physical systems.

4.12) <u>The infinity of the “universe”.</u> According to the present knowledge the physical systems with the biggest masses and dimensions are the clusters of galaxies. Starting from this, on the basis of the

gravitation law it must be accepted the existence of the clusters of clusters of galaxies, namely the clusters of galaxies of second rank, and so on, the level of organization of the clusters of galaxies of N-th rank as well, where N can be whatever big. Consequently, vertically it cannot be determined a biggest mass and dimension.

4.13) <u>The divisibility of the "elementary" particles.</u> According to the present knowledge the class of physical system characterized by the smallest masses and dimensions is the class of photons. The unlimitedness upwards of the number of levels of organization substantiates the hypothesis of the unlimitedness downwards of the number of those. According to this the "elementary" particles are divisible.

4.14) <u>The vertical unlimitedness of the variable physical quantities.</u> It results from the vertical infinity, in both directions of organization of the physical systems, that the absolute values of the variable physical quantities characterizing them can be limited only by the zero from under and only by the infinite from above, namely they are unlimited: they can take up values from the heap R-{0} without lower and upper limitedness.

4.15) <u>The negation of the big-bang hypothesis.</u> The vertical infinity of the physical systems means not only spatial, but also temporal infinity. According to this, it is to be expected that the telescopes will explore about the period before the hypothetical big-bang an image similar to the image of the cosmic space visible at present.

2.2.2. General theory of the physical interactions

2.2.2.1. The electronic manuscript of the article of the first stage

A UNIFICATION OF THE RADIAL STATIC ELECTRIC AND GRAVITATIONAL FORCES

A) Unification

1) The formularization of the radial static electric and gravitational interaction fluxes

Be X and Y two spherical bodies with the rays r_X and r_Y, respectively, having uniform charge and, respectively, mass distributions, being at rest at the distance d from each other, which produce around themselves the radial static electric and, respectively, gravitational-field fluxes Φ_{XE} and Φ_{YE}, and, respectively, Φ_{XG} and Φ_{YG}.

a) $d >> r_X$ and r_Y

$$\Phi_{XE}^* = \Phi_{XE}\, S_X^* / 4\,\pi\, d^2 \quad (1) \quad \text{and} \quad \Phi_{YE}^* = \Phi_{YE}\, S_Y^* / 4\,\pi\, d^2 \quad (2),$$

$$\Phi_{XG}^* = \Phi_{XG}\, S_X^* / 4\,\pi\, d^2 \quad (3) \quad \text{and} \quad \Phi_{YG}^* = \Phi_{YG}\, S_Y^* / 4\,\pi\, d^2 \quad (4),$$

$$S_{\backslash X}^* = \pi\, r_Y^2 \quad (5) \quad \text{and} \quad S_Y^* = \pi\, r_X^2 \quad (6),$$

in which: Φ_{XE}^* — the radial static electric interaction flux of X, [N m^2 / C],

Φ_{YE}^* — the radial static electric interaction flux of Y, [N m^2 / C],

Φ_{XG}^* — the radial static gravitational interaction flux of X, [N m^2 / kg],

Φ_{YG}^* — the radial static gravitational interaction flux of Y, [N m^2 / kg],

Φ_{XE} and Φ_{YE} — the radial static electric fluxes of X and Y, respectively, N m^2 / C],

Φ_{XG} and Φ_{YG} — the radial static gravitational fluxes of X and Y, respectively, [N m^2 / kg],

S_X^* and S_Y^* — the radial static interaction-flux surfaces of X and Y, respectively [m^2].

$$\Phi_{XE} = \delta_0\, q_X \quad (7) \quad \text{and} \quad \Phi_{YE} = \delta_0\, q_Y \quad (8),$$

$$\Phi_{XG} = \gamma_0\, m_X \quad (9) \quad \text{and} \quad \Phi_{YG} = \gamma_0\, m_Y \quad (10),$$

in which : δ_0 — the specific flux in vacuum of the radial static electric field, [N m^2 / C^2],

q_X and q_Y — the charges of X and Y, respectively, [C],

γ_0 — the specific flux in vacuum of the radial static gravitational field, [N m^2 / kg^2],

m_X and m_Y — the masses of X and Y, respectively, [kg].

On the basis of (1) - (10):

$$\Phi_{XE}^* = \delta_0 \, q_X \, r_Y^2 / 4 \, d^2 \quad (11) \quad \text{and} \quad \Phi_{YE}^* = \delta_0 \, q_Y \, r_X^2 / 4 \, d^2 \quad (12),$$

$$\Phi_{XG}^* = \gamma_0 \, m_X \, r_Y^2 / 4 \, d^2 \quad (13) \quad \text{and} \quad \Phi_{YG}^* = \gamma_0 \, m_Y \, r_X^2 / 4 \, d^2 \quad (14).$$

b) $d \sim r_X$ and r_Y

$$\Phi_{XE}^* = \Phi_{XE} \, S_X^* / 4 \, \pi \, d^2 \cos^2\alpha \quad (15) \quad \text{and} \quad \Phi_{YE}^* = \Phi_{YE} \, S_Y^* / 4 \, \pi \, d^2 \cos^2\beta \quad (16),$$

$$\Phi_{XG}^* = \Phi_{XG} \, S_X^* / 4 \, \pi \, d^2 \cos^2\alpha \quad (17) \quad \text{and} \quad \Phi_{YG}^* = \Phi_{YG} \, S_Y^* / 4 \, \pi \, d^2 \cos^2\beta \quad (18),$$

$$S_X^* = \pi \cos\alpha \, (2 \, d^2 \cos\alpha - d^2 - d^2 \cos^2\alpha + r_Y^2) \quad (19),$$

$$S_Y^* = \pi \cos\beta \, (2 \, d^2 \cos\beta - d^2 - d^2 \cos^2\beta + r_X^2) \quad (20),$$

in which: α and β — the angles determined by the straight line linking the centers of X and Y and the tangents drawn from the centers of X and Y, respectively, to the surfaces of Y and X, respectively.

$$r_Y^2 / d^2 = \sin^2\alpha \quad (21) \quad \text{and} \quad r_X^2 / d^2 = \sin^2\beta \quad (22).$$

On the basis of (15) – (22) and (5) – (8):

$$\Phi_{XE}^* = \delta_0 \, q_X \, (1 - \cos\alpha) / 2 \quad (23) \quad \text{and} \quad \Phi_{YE}^* = \delta_0 \, q_Y \, (1 - \cos\beta) / 2 \quad (24),$$

$$\Phi_{XG}^* = \gamma_0 \, m_X \, (1 - \cos\alpha) / 2 \quad (25) \quad \text{and} \quad \Phi_{YG}^* = \gamma_0 \, m_Y \, (1 - \cos\beta) / 2 \quad (26).$$

2) <u>The formularization of the radial static electric and gravitational forces with radial static interaction fluxes</u>

$$F_{XE} = \sigma_{XE}\, \Phi_{XE}^* \quad (27) \quad \text{and} \quad F_{YE} = \sigma_{YE}\, \Phi_{YE}^* \quad (28),$$

$$F_{XG} = \sigma_{XG}\, \Phi_{XG}^* \quad (29) \quad \text{and} \quad F_{YG} = \sigma_{YG}\, \Phi_{YG}^* \quad (30),$$

in which: F_{XE} and F_{XG} — the radial static electric and, respectively, gravitational forces exerted by X onto Y, [N],

F_{YE} and F_{YG} — the radial static electric and, respectively, gravitational forces exerted by Y onto X, [N],

σ_{XE} and σ_{YE} — the electric-force factors of X and Y, respectively, [C / m^2],

σ_{XG} and σ_{YG} — the gravitational-force factors of X and Y, respectively, [kg / m^2].

$$F_{XE} = F_{YE} = F_E \Leftrightarrow \Phi_{XE}^* / \Phi_{YE}^* = \sigma_{YE} / \sigma_{XE} \quad (31),$$

$$F_{XG} = F_{YG} = F_G \Leftrightarrow \Phi_{XG}^* / \Phi_{YG}^* = \sigma_{YG} / \sigma_{XG} \quad (32).$$

a) <u>$d >> r_X$ and r_Y</u>

On the basis of (31), (1), (2), (7) and (8), and, respectively, (32), (3), (4), (9) and (10):

$$\Phi_{XE}^* / \Phi_{YE}^* = \sigma_{YE} / \sigma_{XE} = q_X\, S_X^* / q_Y\, S_Y^* \quad (33),$$

$$\Phi_{XG}^* / \Phi_{YG}^* = \sigma_{YG} / \sigma_{XG} = m_X\, S_X^* / m_Y\, S_Y^* \quad (34).$$

$$\sigma_{XE} = q_Y / S_X^* = q_Y / \pi\, r_Y^2 \quad (35) \quad \text{and} \quad \sigma_{YE} = q_X / S_Y^* = q_X / \pi\, r_X^2 \quad (36),$$

$$\sigma_{XG} = m_Y / S_X^* = m_Y / \pi\, r_Y^2 \quad (37) \quad \text{and} \quad \sigma_{YG} = m_X / S_Y^* = m_X / \pi\, r_X^2 \quad (38).$$

b) <u>$d \sim r_X$ and r_Y</u>

On the basis of (31), (15), (16), (7) and (8), and, respectively, (32),(17), (18), (9) and (10):

$$\Phi_{XE}^* / \Phi_{XE}^* = \sigma_{YE} / \sigma_{XE} = q_X\, S_X^* \cos^2\alpha / q_Y\, S_Y^* \cos^2\beta \quad (39),$$

$$\Phi_{XG}^* / \Phi_{YG}^* = \sigma_{YG} / \sigma_{XG} = m_X\, S_X^* \cos^2\alpha / m_Y\, S_Y^* \cos^2\beta \quad (40).$$

$$\sigma_{XE} = q_Y \cos^2\alpha / S_X^* \quad (41) \quad \text{and} \quad \sigma_{YE} = q_X \cos^2\beta / S_Y^* \quad (42),$$

$$\sigma_{XG} = m_Y \cos^2\alpha / S_X^* \quad (43) \quad \text{and} \quad \sigma_{YG} = m_X \cos^2\beta / S_Y^* \quad (44).$$

On the basis of (41), (42), (15), (16), (21) and (22), and, respectively, (43), (44), (17), (18), (21) and (22):

$$\sigma_{XE} = q_Y (1 + \cos\alpha) / 2\pi r_Y^2 \quad (45) \quad \text{and} \quad \sigma_{YE} = q_X (1 + \cos\beta) / 2\pi r_X^2 \quad (46),$$

$$\sigma_{XG} = m_Y (1 + \cos\alpha) / 2\pi r_Y^2 \quad (47) \quad \text{and} \quad \sigma_{YG} = m_X (1 + \cos\beta) / 2\pi r_X^2 \quad (48).$$

3) <u>The formularization of the radial static electric and gravitational interaction specific surfaces</u>

a) <u>$d >> r_X$ and r_Y</u>

On the basis of (35) – (38):

$$\Sigma_{XE}^* = 1 / \sigma_{XE} = \pi r_Y^2 / q_Y \quad (49) \quad \text{and} \quad \Sigma_{YE}^* = 1 / \sigma_{YE} = \pi r_X^2 / q_X \quad (50),$$

$$\Sigma_{XG}^* = 1 / \sigma_{XG} = \pi r_Y^2 / m_Y \quad (51) \quad \text{and} \quad \Sigma_{YG}^* = 1 / \sigma_{YG} = \pi r_X^2 / m_X \quad (52),$$

in which: Σ_{XE}^* and Σ_{YE}^* — the radial static electric interaction specific surfaces of F_{XE}, and F_{YE}, respectively, [m^2 / C],

Σ_{XG}^* and Σ_{YG}^* — the radial static gravitational interaction specific surfaces of F_{XG}, and F_{YG}, respectively, [m^2 / kg].

b) <u>$d \sim r_X$ and r_Y</u>

On the basis of (45) – (48):

$$\Sigma_{XE}^* = 2\pi r_Y^2 / q_Y (1 + \cos\alpha) \quad (53) \quad \text{and} \quad \Sigma_{YE}^* = 2\pi r_X^2 / q_X (1 + \cos\beta) \quad (54),$$

$$\Sigma_{XG}^* = 2\pi r_Y^2 / m_Y (1 + \cos\alpha) \quad (55) \quad \text{and} \quad \Sigma_{YG}^* = 2\pi r_X^2 / m_X (1 + \cos\beta) \quad (56).$$

4) <u>The formularization of the radial static electric and gravitational forces with radial static interaction fluxes and interaction specific surfaces</u>

On the basis of (27) and (30), and, respectively, (49) and (52):

$$F_{XE} = \Phi_{XE}^* / \Sigma_{XE}^* \quad (57) \quad \text{and} \quad F_{YE} = \Phi_{YE}^* / \Sigma_{YE}^* \quad (58),$$

$$F_{XG} = \Phi_{XG}^* / \Sigma_{XG}^* \quad (59) \quad \text{and} \quad F_{YG} = \Phi_{YG}^* / \Sigma_{YG}^* \quad (60).$$

5) The unification of the radial static electric and gravitational forces

5.1) The formularization of the radial static interaction flux

X and Y dispose of radial static-field sources, of which unit of measure is U and they produce around themselves the radial static-field fluxes Φ_X and Φ_Y.

a) $d >> r_X$ and r_Y

$$\Phi_X^* = \Phi_X S_X^* / 4 \pi d^2 \quad (61) \quad \text{and} \quad \Phi_Y^* = \Phi_Y S_Y^* / 4 \pi d^2 \quad (62),$$

in which: Φ_X^* — the radial static interaction flux of X, [N m^2 / U],

Φ_Y^* — the radial static interaction flux of Y, [N m^2 / U].

$$\Phi_X = \varphi_0 u_X \quad (63) \quad \text{and} \quad \Phi_Y = \varphi_0 u_Y \quad (64),$$

in which : φ_0 — the specific flux in vacuum of the radial static field, [N m^2 / U^2],

u_X and u_Y — the radial static-field sources of X and Y, respectively, [U].

On the basis of (61) – (64), (5) and (6):

$$\Phi_X^* = \varphi_0 u_X r_Y^2 / 4 d^2 \quad (65) \quad \text{and} \quad \Phi_Y^* = \varphi_0 u_Y r_X^2 / 4 d^2 \quad (66).$$

b) $d \sim r_X$ and r_Y

$$\Phi_X^* = \Phi_X S_X^* / 4 \pi d^2 \cos^2\alpha \quad (67) \quad \text{and} \quad \Phi_Y^* = \Phi_Y S_Y^* / 4 \pi d^2 \cos^2\beta \quad (68).$$

On the basis of (67), (68), (63), (64), (19) and (20):

$$\Phi_X^* = \varphi_0 u_X (1 - \cos \alpha) / 2 \quad (69) \quad \text{and} \quad \Phi_Y^* = \varphi_0 u_Y (1 - \cos \beta) / 2 \quad (70).$$

5.2) The formularization of the radial static interaction specific surface

a) $d >> r_X$ and r_Y

$$\Sigma_X^* = S_X^* / u_Y = \pi r_Y^2 / u_Y \quad (71) \quad \text{and} \quad \Sigma_Y^* = S_Y^* / u_X = \pi r_X^2 / u_X \quad (72),$$

in which: Σ_X^* and Σ_Y^* —the radial static interaction specific surfaces of F_X and F_Y, respectively, [m^2 / U].

b) $d \sim r_X$ and r_Y

$$\Sigma_X^* = S_X^* / u_Y \cos^2\alpha = 2 \pi r_Y^2 / u_Y (1 + \cos \alpha) \quad (73),$$

$$\Sigma_Y^* = S_Y^* / u_X \cos^2\beta = 2 \pi r_X^2 / u_X (1 + \cos \beta) \quad (74).$$

5.3) <u>The formularization of the radial static forces with interaction fluxes and interaction specific surfaces</u>

$$F_X = \Phi_X^* / \Sigma_X^* \quad (75) \quad \text{and} \quad F_Y = \Phi_Y^* / \Sigma_Y^* \quad (76),$$

in which: F_X — the radial static force exerted by X onto Y, [N],

F_Y — the radial static force exerted by Y onto X, [N].

B) <u>Corroborations</u>

On the basis of (75), (76), (65), (66), (71) and (72), and, respectively, (75), (76), (67), (68), (73), (74),(21) and (22):

$$F_X = F_Y = F = \varphi_0 u_X u_Y / 4 \pi d^2 \quad (77),$$

in which: F — the force of the radial static interaction of X and Y, [N].

1) <u>The deduction of the law of Coulomb and the formularization of the electric specific flux</u>

$$\varphi_0 = \delta_0 \quad (78), \quad u_X = q_X \quad (79) \quad \text{and} \quad u_Y = q_Y \quad (80).$$

On the basis of (77) – (80):

$$F_E = \delta_0 q_X q_Y / 4 \pi d^2 \quad (81),$$

in which: F_E — the force of the radial static electric interaction of X and Y, [N].

According to the law of Gauss:

$$\Phi_{XE} = q_X / \varepsilon_0 \quad (82) \quad \text{and} \quad \Phi_{YE} = q_Y / \varepsilon_0 \quad (83),$$

in which: ε_0 — the permitivity constant, [C^2 /N m^2].

On the basis of (82), (83),(7) and (8):

$$\delta_0 = 1 / \varepsilon_0 \quad (84).$$

On the basis of (81) and (84):

$$F_E = q_X q_Y / 4 \pi \varepsilon_0 d^2 \quad (85).$$

2) <u>The deduction of the law of Newton and the formularization of the gravitational specific flux</u>

$$\varphi_0 = \gamma_0 \quad (86), \quad u_X = m_X \quad (87) \quad \text{and} \quad u_Y = m_Y \quad (88).$$

On the basis of (77), (86) – (88):

$$F_G = \gamma_0 \, m_X \, m_Y / 4 \, \pi \, d^2 \quad (89),$$

in which : F_G — the force of the radial static gravitational interaction of X and Y, [N].

On the basis of the law of Gauss:

$$\Phi_{XG} = 4 \, \pi \, G \, m_X \quad (90) \quad \text{and} \quad \Phi_{YG} = 4 \, \pi \, G \, m_Y \quad (91),$$

in which: G — the gravitational constant, [N m2 / C^2].

On the basis of (90), (91), (9) and (10):

$$\gamma_0 = 4 \, \pi \, G \quad (92).$$

On the basis of (89) and (92):

$$F_G = G \, m_X \, m_Y / d^2 \quad (93).$$

C) <u>The formularization of the radial static interaction index</u>

a) <u>$d >> r_X$ and r_Y</u>

On the basis of (65), (66), (73) and (74):

$$\Phi_X^* / \Phi_Y^* = \Sigma_X^* / \Sigma_Y^* = u_X \, r_Y^2 / u_Y \, r_X^2 = f \quad (94),$$

in which: f — the radial static interaction index of the radial static interaction of X and Y.

If $u_X = u_Y$ and $r_X = r_Y$ — in case of which, according to (94), $f = 1$ — X and Y are equal in rank in their radial static interaction. Applying (94) to the solar system ($u_X = m_X$, $u_Y = m_Y$ and $f = f_G$) in every case f_G is larger than one in favor of the sun (X is the sun). Further, in the electric interaction of the nuclei and the electron ($u_X = q_X$, $u_Y = q_Y$ and $f = f_E$) $f_E > 1$ in favor of the nuclei (the Xs are the nuclei). Beginning from the lithium, in the interaction of the ions charged +1 and the electron f_E is larger than one in favor of the electron (X is the electron). On the basis of (94):

$$f = u_X / r_X^2 \, // \, u_Y / r_Y^2 \quad (95).$$

According to (95) the radial static interaction index can be expressed as a ratio of the properties of X and Y. From all these it results that in the radial static interaction of X and Y — and only in relation to the given interaction — the interaction index indicates the super-ordinate role of that interacting part in favor of which $f > 1$.

b) $d \sim r_X$ and r_Y

On the basis of (69), (70), (73), (74), (21) and (22):

$$f = \Phi_X^* / \Phi_Y^* = \Sigma_X^* / \Sigma_Y^* = u_X (1 - \cos \alpha) / u_Y (1 - \cos \beta) \quad (96).$$

2.2.2.2. The electronic manuscript of the article of the second stage

CLASSICAL INDUCTIVE GENERAL LAW OF THE FUNDAMENTAL PHYSICAL INTERACTIONS AND FORCES

A) Fundamental-interaction concepts and laws

Be X and Y two spherical bodies with the rays r_X and r_Y, respectively, having symmetrical mass and, respectively, charge distributions, at the distance d from each other, in a common system of co-ordinates, parallel with each other, on straight lines, with the velocities v_X and v_Y, respectively, considerably smaller than the velocity of the light, which produce around themselves the gravitational-, electric- and, respectively, magnetic field fluxes Φ_{XG} and Φ_{YG}, Φ_{XE} and Φ_{YE}, and, respectively, Φ_{XM} and Φ_{YM}.

1) The laws of the gravitational, electric and magnetic fluxes

From the law of Gauss, as well as of Biot and Savart:

$$\Phi_{XG} = \gamma_0 m_X \quad (1) \quad \text{and} \quad \Phi_{YG} = \gamma_0 m_Y \quad (2),$$

$$\Phi_{XE} = \delta_0 q_X \quad (3) \quad \text{and} \quad \Phi_{YE} = \delta_0 q_Y \quad (4),$$

$$\Phi_{XM} = \mu_0 q_X v_X \sin\theta \quad (5) \quad \text{and} \quad \Phi_{YM} = \mu_0 q_Y v_Y \sin\omega \quad (6)[1],$$

in which: γ_0 — the specific flux in vacuum of the gravitational field, [N m^2 / kg^2],

m_X and m_Y — the masses of X and Y, respectively, [kg],

δ_0 — the specific flux in vacuum of the electric field, [N m^2 / C^2],

q_X and q_Y — the electric charges of X and Y, respectively, [C],

μ_0 — the magnetic permeability of the vacuum, [Wb s / C m],

θ and ω — the angles formed by the straight line linking the centers of X and Y with v_X and v_Y, respectively.

2) The concepts of the gravitational, electric and magnetic interaction fluxes

a) $d >> r_X$ and r_Y

[1] From the law of Biot and Savart.

$$\Phi_{XG}^* = \Phi_{XG}\, S_X^* / 4\pi d^2 \quad (7) \quad \text{and} \quad \Phi_{YG}^* = \Phi_{YG}\, S_Y^* / 4\pi d^2 \quad (8),$$

$$\Phi_{XE}^* = \Phi_{XE}\, S_X^* / 4\pi d^2 \quad (9) \quad \text{and} \quad \Phi_{YE}^* = \Phi_{YE}\, S_Y^* / 4\pi d^2 \quad (10),$$

$$\Phi_{XM}^* = \Phi_{XM}\, S_X^* / 4\pi d^2 \quad (11) \quad \text{and} \quad \Phi_{YM}^* = \Phi_{YM}\, S_Y^* / 4\pi d^2 \quad (12),$$

$$S_{\backslash X}^* = \pi r_Y^2 \quad (13) \quad \text{and} \quad S_Y^* = \pi r_X^2 \quad (14),$$

in which: Φ_{XG}^* — the gravitational interaction flux of X, [N m^2 / kg],

Φ_{YG}^* — the gravitational interaction flux of Y, [N m^2 / kg],

Φ_{XE}^* — the electric interaction flux of X, [N m^2 / C],

Φ_{YE}^* — the electric interaction flux of Y, [N m^2 / C],

Φ_{XM}^* — the magnetic interaction flux of X, [Wb],

Φ_{YM}^* — the magnetic interaction flux of Y, [Wb],

Φ_{XG} and Φ_{YG} — the gravitational fluxes of X and Y, respectively, [N m^2 / kg],

Φ_{XE} and Φ_{YE} — the electric fluxes of X and Y, respectively, [N m^2 / C],

Φ_{XM} and Φ_{YM} — the magnetic fluxes of X and Y, respectively, [Wb],

S_X^* and S_Y^* — the interaction-flux surfaces of X and Y, respectively, [m^2].

On the basis of (1) - (14):

$$\Phi_{XG}^* = \gamma_0\, m_X\, r_Y^2 / 4 d^2 \quad (15) \quad \text{and} \quad \Phi_{YG}^* = \gamma_0\, m_Y\, r_X^2 / 4 d^2 \quad (16).$$

$$\Phi_{XE}^* = \delta_0\, q_X\, r_Y^2 / 4 d^2 \quad (17) \quad \text{and} \quad \Phi_{YE}^* = \delta_0\, q_Y\, r_X^2 / 4 d^2 \quad (18),$$

$$\Phi_{XM}^* = \mu_0\, q_X\, v_X\, r_Y^2 \sin\theta / 4 d^2 \quad (19) \quad \text{and} \quad \Phi_{YM}^* = \mu_0\, q_Y\, v_Y\, r_X^2 \sin\omega / 4 d^2 \quad (20),$$

b) $\underline{d \sim r_X \text{ and } r_Y}$

$$\Phi_{XG}^* = \Phi_{XG}\, S_X^* / 4\pi d^2 \cos^2\alpha \quad (21) \quad \text{and} \quad \Phi_{YG}^* = \Phi_{YG}\, S_Y^* / 4\pi d^2 \cos^2\beta \quad (22),$$

$$\Phi_{XE}^* = \Phi_{XE}\, S_X^* / 4\pi d^2 \cos^2\alpha \quad (23) \quad \text{and} \quad \Phi_{YE}^* = \Phi_{YE}\, S_Y^* / 4\pi d^2 \cos^2\beta \quad (24),$$

$$S_X^* = \pi \cos\alpha\, (2 d^2 \cos\alpha - d^2 - d^2 \cos^2\alpha + r_Y^2) \quad (25),$$

$$S_Y^* = \pi \cos\beta\, (2 d^2 \cos\beta - d^2 - d^2 \cos^2\beta + r_X^2) \quad (26),$$

in which: α and β — the angles determined by the straight line linking the centers of X and Y and the tangents drawn from the centers of X and Y, respectively, to the surfaces of Y and X, respectively.

$$r_Y^2 / d^2 = \sin^2\alpha \quad (27) \quad \text{and} \quad r_X^2 / d^2 = \sin^2\beta \quad (28).$$

On the basis of (21) – (28) and (1) − (4):

$$\Phi_{XG}^* = \gamma_0 m_X (1 - \cos\alpha) / 2 \quad (29) \quad \text{and} \quad \Phi_{YG}^* = \gamma_0 m_Y (1 - \cos\beta) / 2 \quad (30),$$

$$\Phi_{XE}^* = \delta_0 q_X (1 - \cos\alpha) / 2 \quad (31) \quad \text{and} \quad \Phi_{YE}^* = \delta_0 q_Y (1 - \cos\beta) / 2 \quad (32).$$

3) <u>The concepts of the gravitational, electric and magnetic interaction specific surfaces</u>

$$F_{XG} = \sigma_{XG} \Phi_{XG}^* \quad (33) \quad \text{and} \quad F_{YG} = \sigma_{YG} \Phi_{YG}^* \quad (34),$$

$$F_{XE} = \sigma_{XE} \Phi_{XE}^* \quad (35) \quad \text{and} \quad F_{YE} = \sigma_{YE} \Phi_{YE}^* \quad (36),$$

$$F_{XM} = \sigma_{XM} \Phi_{XM}^* \quad (37) \quad \text{and} \quad F_{YM} = \sigma_{YM} \Phi_{YM}^* \quad (38),$$

in which: F_{XG}, F_{XE} and F_{XM} — the gravitational, electric and, respectively, magnetic forces exerted by X onto Y, [N],

F_{YG}, F_{YE} and F_{YM} — the gravitational, electric and, respectively, magnetic forces exerted by Y onto X, [N],

σ_{XG} and σ_{YG} — the gravitational-force factors of X and Y, respectively, [kg / m^2],

σ_{XE} and σ_{YE} — the electric-force factors of X and Y, respectively, [C / m^2],

σ_{XM} and σ_{YM} — the magnetic-force factors of X and Y, respectively, [C / m s].

$$F_{XG} = F_{YG} = F_G \Rightarrow \Phi_{XG}^* / \Phi_{YG}^* = \sigma_{YG} / \sigma_{XG} \quad (39),$$

$$F_{XE} = F_{YE} = F_E \Rightarrow \Phi_{XE}^* / \Phi_{YE}^* = \sigma_{YE} / \sigma_{XE} \quad (40),$$

$$F_{XM} = F_{YM} = F_M \Rightarrow \Phi_{XM}^* / \Phi_{YM}^* = \sigma_{YM} / \sigma_{XM} \quad (41).$$

a) <u>$d >> r_X$ and r_Y</u>

On the basis of (39), (7), (8), (1) and (2), as well as of (40), (9), (10), (3) and (4), and, respectively, of (41), (11), (12), (5) and (6):

$$\Phi_{XG}^* / \Phi_{YG}^* = \sigma_{YG} / \sigma_{XG} = m_X S_X^* / m_Y S_Y^* \quad (42),$$

$$\Phi_{XE}^* / \Phi_{YE}^* = \sigma_{YE} / \sigma_{XE} = q_X S_X^* / q_Y S_Y^* \quad (43),$$

$$\Phi_{XM}^* / \Phi_{YM}^* = \sigma_{YM} / \sigma_{XM} = q_X v_X S_X^* \sin\theta / q_Y v_Y S_Y^* \sin\omega \quad (44).$$

$$\sigma_{XG} = m_Y / S_X^* = m_Y / \pi r_Y^2 \quad (45) \quad \text{and} \quad \sigma_{YG} = m_X / S_Y^* = m_X / \pi r_X^2 \quad (46),$$

$$\sigma_{XE} = q_Y / S_X^* = q_Y / \pi r_Y^2 \quad (47) \quad \text{and} \quad \sigma_{YE} = q_X / S_Y^* = q_X / \pi r_X^2 \quad (48),$$

$$\sigma_{XM} = q_Y v_Y \sin\omega / S_X^* = q_Y v_Y \sin\omega / \pi r_Y^2 \quad (49),$$

$$\sigma_{YM} = q_X v_X \sin\theta / S_Y^* = q_X v_X \sin\theta / \pi r_X^2 \quad (50).$$

$$\Sigma_{XG}^* = 1 / \sigma_{XG} = \pi r_Y^2 / m_Y \quad (51) \quad \text{and} \quad \Sigma_{YG}^* = 1 / \sigma_{YG} = \pi r_X^2 / m_X \quad (52),$$

$$\Sigma_{XE}^* = 1 / \sigma_{XE} = \pi r_Y^2 / q_Y \quad (53) \quad \text{and} \quad \Sigma_{YE}^* = 1 / \sigma_{YE} = \pi r_X^2 / q_X \quad (54),$$

$$\Sigma_{XM}^* = 1 / \sigma_{XM} = \pi r_Y^2 / q_Y v_Y \sin\omega \quad (55) \text{ and } \Sigma_{YM}^* = 1 / \sigma_{YM} = \pi r_X^2 / q_X v_X \sin\theta \quad (56),$$

in which: Σ_{XG}^* and Σ_{YG}^* — the interaction specific surfaces of F_{XG} and F_{YG}, respectively, [m^2 / kg],

Σ_{XE}^* and Σ_{YE}^* — the interaction specific surfaces of F_{XE} and F_{YE}, respectively, [m^2 / C],

Σ_{XM}^* and Σ_{YM}^* — the interaction specific surfaces of F_{XM} and F_{YM}, respectively, [m s / C].

b) $d \sim r_X$ and r_Y

On the basis of (39), (21), (22), (1) and (2), and, respectively of (40),(23), (24), (3) and (4):

$$\Phi_{XG}^* / \Phi_{YG}^* = \sigma_{YG} / \sigma_{XG} = m_X S_X^* \cos^2\beta / m_Y S_Y^* \cos^2\alpha \quad (57),$$

$$\Phi_{XE}^* / \Phi_{YE}^* = \sigma_{YE} / \sigma_{XE} = q_X S_X^* \cos^2\beta / q_Y S_Y^* \cos^2\alpha \quad (58),$$

$$\sigma_{XG} = m_Y \cos^2\alpha / S_X^* \quad (59) \quad \text{and} \quad \sigma_{YG} = m_X \cos^2\beta / S_Y^* \quad (60),$$

$$\sigma_{XE} = q_Y \cos^2\alpha / S_X^* \quad (61) \quad \text{and} \quad \sigma_{YE} = q_X \cos^2\beta / S_Y^* \quad (62).$$

On the basis of (59), (60) and (25) − (28) and, respectively, of (61), (62) and (25) − (28):

$$\sigma_{XG} = m_Y (1 + \cos\alpha) / 2\pi r_Y^2 \quad (63) \quad \text{and} \quad \sigma_{YG} = m_X (1 + \cos\beta) / 2\pi r_X^2 \quad (64),$$

$$\sigma_{XE} = q_Y (1 + \cos\alpha) / 2\pi r_Y^2 \quad (65) \quad \text{and} \quad \sigma_{YE} = q_X (1 + \cos\beta) / 2\pi r_X^2 \quad (66),$$

$$\Sigma_{XG}^* = 2\,\pi\,r_Y^2 / m_Y\,(1 + \cos\alpha) \quad (67) \quad \text{and} \quad \Sigma_{YG}^* = 2\,\pi\,r_X^2 / m_X\,(1 + \cos\beta) \quad (68),$$

$$\Sigma_{XE}^* = 2\,\pi\,r_Y^2 / q_Y\,(1 + \cos\alpha) \quad (69) \quad \text{and} \quad \Sigma_{YE}^* = 2\,\pi\,r_X^2 / q_X\,(1 + \cos\beta) \quad (70).$$

4) <u>The laws of the gravitational, electric and magnetic interactions</u>

On the basis of (33) − (38), and, respectively, of (51) − (56):

$$F_{XG} = \Phi_{XG}^* / \Sigma_{XG}^* \quad (71) \quad \text{and} \quad F_{YG} = \Phi_{YG}^* / \Sigma_{YG}^* \quad (72),$$

$$F_{XE} = \Phi_{XE}^* / \Sigma_{XE}^* \quad (73) \quad \text{and} \quad F_{YE} = \Phi_{YE}^* / \Sigma_{YE}^* \quad (74),$$

$$F_{XM} = \Phi_{XM}^* / \Sigma_{XM}^* \quad (75) \quad \text{and} \quad F_{YM} = \Phi_{YM}^* / \Sigma_{YM}^* \quad (76).$$

B) <u>The generalization of the fundamental-interaction concepts and laws</u>

X and Y dispose of interaction-field sources, of which unit of measure is U, and produce around themselves the field fluxes Φ_X and Φ_Y.

1) <u>The general law of flux</u>

$$\Phi_X = \varphi_0\,u_X \quad (77) \quad \text{and} \quad \Phi_Y = \varphi_0\,u_Y \quad (78),$$

in which: φ_0 — the specific flux in vacuum of the interaction field, [N m^2 / U^2],

u_X and u_Y — the field sources of X and Y, respectively, [U].

2) <u>The general concept of interaction flux</u>

a) <u>$d >> r_X$ and r_Y</u>

$$\Phi_X^* = \Phi_X\,S_X^* / 4\,\pi\,d^2 \quad (79) \quad \text{and} \quad \Phi_Y^* = \Phi_Y\,S_Y^* / 4\,\pi\,d^2 \quad (80),$$

in which: Φ_X^* — the interaction flux of X, [N m^2 / U],

Φ_Y^* — the interaction flux of Y, [N m^2 / U].

On the basis of (79), (80), (77), (78), (13) and (14):

$$\Phi_X^* = \varphi_0\,u_X\,r_Y^2 / 4\,d^2 \quad (81) \quad \text{and} \quad \Phi_Y^* = \varphi_0\,u_Y\,r_X^2 / 4\,d^2 \quad (82).$$

b) <u>$d \sim r_X$ and r_Y</u>

$$\Phi_X^* = \Phi_X \, S_X^* / 4 \pi d^2 \cos^2\alpha \quad (83) \quad \text{and} \quad \Phi_Y^* = \Phi_Y \, S_Y^* / 4 \pi d^2 \cos^2\beta \quad (84).$$

On the basis of (83), (84), (77), (78), (25) and (26):

$$\Phi_X^* = \varphi_0 \, u_X \, (1 - \cos\alpha) / 2 \quad (85) \quad \text{and} \quad \Phi_Y^* = \varphi_0 \, u_Y \, (1 - \cos\beta) / 2 \quad (86).$$

3) <u>The general concept of interaction specific surface</u>

a) <u>$d >> r_X$ and r_Y</u>

$$\Sigma_X^* = S_X^* / u_Y = \pi \, r_Y^2 / u_Y \quad (87) \quad \text{and} \quad \Sigma_Y^* = S_Y^* / u_X = \pi \, r_X^2 / u_X \quad (88),$$

in which: Σ_X^* and Σ_Y^* — the interaction specific surfaces of F_X and F_Y, respectively, [m^2 / U].

b) <u>$d \sim r_X$ and r_Y</u>

$$\Sigma_X^* = S_X^* / u_Y \cos^2\alpha = 2 \pi \, r_Y^2 / u_Y \, (1 + \cos\alpha) \quad (89),$$

$$\Sigma_Y^* = S_Y^* / u_X \cos^2\beta = 2 \pi \, r_X^2 / u_X \, (1 + \cos\beta) \quad (90).$$

4) <u>The general law of the fundamental physical interactions</u>

$$F_X = \Phi_X^* / \Sigma_X^* \quad (91) \quad \text{and} \quad F_Y = \Phi_Y^* / \Sigma_Y^* \quad (92),$$

in which: F_X — the force exerted by X onto Y, [N],

F_Y — the force exerted by Y onto X, [N].

C) <u>Consequences</u>

1) <u>The physical interpretation of the gravitational constant</u>

On the basis of the law of Gauss:

$$\Phi_{XG} = 4 \pi \, G \, m_X \quad (93) \quad \text{and} \quad \Phi_{YG} = 4 \pi \, G \, m_Y \quad (94),$$

in which: : G — the gravitational constant, [N m^2 / kg^2].

On the basis of (93), (94), (1) and (2):

$$G = \gamma_0 / 4 \pi \quad (95).$$

2) <u>The physical interpretation of the electric permitivity constant</u>

According to the law of Gauss:

$$\Phi_{XE} = q_X / \varepsilon_0 \quad (96) \quad \text{and} \quad \Phi_{YE} = q_Y / \varepsilon_0 \quad (97),$$

in which: ε_0 — the electric permitivity constant, [C^2 / N m^2].

On the basis of (96), (97), (3) and (4):

$$\varepsilon_0 = 1 / \delta_0 \quad (98).$$

3) <u>The physical interpretation of the magnetic permeability constant</u>

The magnetic permeability constant can be interpreted for the specific flux in vacuum of the magnetic field.

4) <u>The origination of the general law of the fundamental physical forces</u>

On the basis of (91), (92), (81), (82), (87) and (88), and, respectively, of (91), (92), (83), (84), (89), (90),(27) and (28):

$$F_X = F_Y = F = \varphi_0 u_X u_Y / 4 \pi d^2 \quad (99),$$

in which: F — the fundamental physical force between X and Y, [N].

5) <u>The origination of the gravitational law of Newton and the formularization of the gravitational specific flux</u>

$$\varphi_0 = \gamma_0 \quad (100), \quad u_X = m_X \quad (101) \quad \text{and} \quad u_Y = m_Y \quad (102).$$

On the basis of (99) and (100) – (102):

$$F_G = \gamma_0 m_X m_Y / 4 \pi d^2 \quad (103),$$

in which: F_G — the gravitational force between X and Y, [N].

On the basis of (95):

$$\gamma_0 = 4 \pi G \quad (104).$$

On the basis of (103) and (104):

$$F_G = G\, m_X\, m_Y / d^2 \quad (105).$$

6) <u>The origination of the law of Coulomb and the formularization of the electric specific flux</u>

$$\varphi_0 = \delta_0 \quad (106), \quad u_X = q_X \quad (107) \quad \text{and} \quad u_Y = q_Y \quad (108).$$

On the basis of (99), and (106) – (108):

$$F_E = \delta_0\, q_X\, q_Y / 4\, \pi\, d^2 \quad (109),$$

in which: F_E — the electric force between X and Y, [N].

On the basis of (98):

$$\delta_0 = 1 / \varepsilon_0 \quad (110).$$

On the basis of (109) and (110):

$$F_E = q_X\, q_Y / 4\, \pi\, \varepsilon_0\, d^2 \quad (111).$$

7) <u>The origination of the law of the magnetic force</u>

$$\varphi_0 = \mu_0 \quad (112), \quad u_X = q_X\, v_X \sin\theta \quad (113) \quad \text{and} \quad u_Y = q_Y\, v_Y \sin\omega \quad (114).$$

On the basis of (99) and (112) − (114):

$$F_M = \mu_0\, q_X\, q_Y\, v_X\, v_Y \sin\theta \sin\omega / 4\, \pi\, d^2 \quad (115),$$

in which: F_M — the magnetic force between X and Y, [N].

8) <u>The effect of Newton's third law.</u> In the case of the magnetic interaction the third law of Newton cannot vectorially be applied generally, because the angle between F_{XM} and F_{YM} regularly is smaller than 180 °.

9) <u>A hypothetical law of the strong force</u>

Be X a neutron and Y a proton, which, by their q_{XS} and q_{YS} strong charges — according to the hypothesis of Yukawa — produce around themselves the pion-field fluxes Φ_{XS} and Φ_{YS}. The unit of measure of the strong charge may be the Yukawa, [Y]. The Yukawa may be defined for the strong-charge quantity of the nucleon.

$$\varphi_0 = \sigma_0 \quad (116), \qquad u_X = q_{XS}\,[(d - d_{mS})^a\,(d_{MS} - d)^b]^{1\,/\,2k} \,/\, D_{XS}^{(a+b)\,/\,2k} \quad (117),$$

$$u_Y = q_{YS}\,[(d - d_{mS})^i\,(d_{MS} - d)^n]^{1\,/\,2k} \,/\, D_{YS}^{(i+n)\,/\,2k} \quad (118),$$

$$D_{XS} = (a\,d_{MS} + b\,d_{mS}) / (a + b) \quad (119) \quad \text{and} \quad D_{YS} = (i\,d_{MS} + n\,d_{mS}) / (i + n) \quad (120),$$

in which: σ_0 — the specific flux of the strong field, [N m^2 / Y],

d_{mS} — the minimum strong-interaction distance between X and Y, [m],

d_{MS} — the maximum strong-interaction distance between X and Y, [m],

D_{XS} and D_{YS} — the maximum strong-flux distances of X and Y, respectively, [m],

a, b,i, k and n — nonzero natural numbers.

On the basis of (85), (86), (116)− (118), (27) and (28):

$$\Phi_{XS}^* = \sigma_0\,q_{XS}\,[(d - d_{mS})^a\,(d_{MS} - d)^b]^{1\,/\,2k}\,[1 - (1 - r_Y^2 / d^2)^{1/2}] \,/\, 2\,D_{XS}^{(a+b)\,/\,2k} \quad (121),$$

$$\Phi_{YS}^* = \sigma_0\,q_{YS}\,[(d - d_{mS})^i\,(d_{MS} - d)^n]^{1\,/\,2k}\,[1 - (1 - r_X^2 / d^2)^{1\,/\,2}] \,/\, 2\,D_{YS}^{(i+n)\,/\,2k} \quad (122),$$

in which: Φ_{XS}^* and Φ_{YS}^* — the strong-interaction flux of X and Y, respectively, [N m^2 / Y].

On the basis of (89), (90), (117) and (118):

$$\Sigma_{XS}^* = 2\,\pi\,r_Y^2\,D_{YS}^{(i+n)\,/\,2k} / q_{YS}\,[(d - d_{mS})^i\,(d_{MS} - d)^n]^{1\,/\,2k}\,[1 + (1 - r_Y^2 / d^2)^{1/2}] \quad (123),$$

$$\Sigma_{YS}^* = 2\,\pi\,r_X^2\,D_{XS}^{(a+b)\,/\,2k} / q_{XS}\,[(d - d_{mS})^a\,(d_{MS} - d)^b]^{1\,/\,2k}\,[1 + (1 - r_X^2 / d^2)^{1/2}] \quad (124),$$

in which: Σ_{XS}^* and Σ_{YS}^* — the interaction specific surfaces of F_{XS} and F_{YS}, respectively, [m^2 / Y].

On the basis of (91) and (92):

$$F_{XS} = \Phi_{XS}^* / \Sigma_{XS}^* \quad (125) \quad \text{and} \quad F_{YS} = \Phi_{YS}^* / \Sigma_{YS}^* \quad (126),$$

in which: F_{XS} — the strong force exerted by X onto Y, [N],

F_{YS} — the strong force exerted by Y onto X, [N].

On the basis of (125), (126) and (121) — (124), as well as of (99) and (116) — (118):

$$F_S = \sigma_0 \, q_{XS} \, q_{YS} \, [(d - d_{mS})^{a + i} \, (d_{MS} - d)^{b + n}]^{1 / k} / 4 \, \pi \, d^2 \, D_{XS}^{(a + b) / 2k} \, D_{YS}^{(i + n) / 2k} \quad (127),$$

in which: F_S — the strong force between X and Y, [N].

10) <u>The "weak deuteron" and the weak force</u>

Be X a neutron and Y a proton, which, by their weak charges, produce around themselves a field of electrons and anti-neutrinos. If:

$$d_{mW} \leq d \leq d_{MW}, \quad (128),$$

in which: d_{mW} — the minimum weak-interaction distance between X and Y, [m],

d_{MW} — the maximum weak-interaction distance between X and Y, [m],

a weak interaction exists between the neutron and the proton, which may be termed "weak deuteron".

From the indeterminancy principle of Heisenberg:

$$d_{aW} \approx h / 2 \, \pi \, m_{0e} \, c \approx 100 \, d_{aS} \quad (129),$$

in which: d_{aW} and d_{aS} — the action distances of the weak and, respectively, the strong fields, [m],

h — the constant of Planck, [J s],

m_{0e} — the rest mass of the electron, [kg],

c — the velocity of the light, [m / s].

Deuteron: $n–(\pi^-)–p$ (130),

"weak deuteron": $n–(e^-,\nu')–p$ (131),

π disintegration of the neutron: $n \rightarrow p + \pi^-$ (132),

β disintegration of the neutron: $n \rightarrow p + e^- + \nu'$ (133).

While in case of the deuteron the π disintegration of the neutron is virtual, in case of the "weak deuteron", the "weak deuteron" itself is virtual. Consequently, the β disintegration of the neutron can be interpreted for such a process, a virtual inter-state of which is the weak interaction between the disintegrating neutrons and the formed protons:

$$n \rightarrow [n–(e^{-},\nu')–p] \rightarrow n \rightarrow p + e^{-} + \nu' \qquad (134).$$

The "weak deuteron" may be comprehended for such a virtual state of equilibrium, which is characterized by the equilibrium of the leptons exchanged by the neutron and the proton. Depending on the nature of the "exchanged" leptons, there are four kinds of "weak deuterons": the "weak deuterons" of the β^{-} disintegration, of the β^{+} disintegration, of the electron capture and of the " positron capture":

β^{-} disintegration: $n \rightarrow p + e^{-} + \nu'$, namely $n–(e^{-},\nu')–p$ (135),

β^{+} disintegration: $p \rightarrow n + e^{+} + \nu$, namely $n–(e^{+},\nu)–p$ (136),

electron capture: $p + e^{-} \rightarrow n + \nu$, namely $n–(e^{-},\nu)–p$ (137),

"positron capture": $n + e^{+} \rightarrow p + \nu'$, namely $n–(e^{+},\nu')–p$ (138).

As $m_{0e} \sim m_{0\pi}$, the law of the weak force formally corresponds to the law of the strong force:

$$F_W = \omega_0 \, q_{XW} \, q_{YW} \, [(d - d_{mW})^{a+i} \, (d_{MW} - d)^{b+n}]^{1/k} / 4 \pi d^2 \, D_{XW}^{(a+b)/2k} \, D_{YW}^{(i+n)/2k} \qquad (139),$$

in which: F_W — the weak force between X and Y, [N],

ω_0 — the specific flux of the weak field, [N m^2 / U],

q_{XW} and q_{YW} — the weak charges of X and Y, respectively, [U].

D_{XW} and D_{YW} — the maximum weak-flux distances of X and Y, respectively, [m].

11) <u>The analogy of the fundamental physical interactions with the chemical covalent bond</u>

It is characteristic the mutual analogy between the fundamental physical interactions and the chemical covalent bond. According to this the covalent bond is constituted by the "electron field" formed by the electrons of the exterior shells of the chemically interacting parts:

hydrogen molecule: $p–(e^{-})–p$ (140).

The interacting parts of the fundamental physical interactions are linked by “field-quanta bonds”:

$$\text{deuteron:} \qquad n—p \qquad (141).$$

For instance the “weak deuteron” can be compared with the NaCl “molecule”:

$$Na + ½\ Cl_2 \rightarrow [\ Na—Cl \Rightarrow Na^+ + Cl^-] \rightarrow Na^+ + Cl^- \qquad (142).$$

12) <u>The physical interpretation of the mass</u>

The mass can be interpreted for the gravitational charge of the bodies.

13) <u>The concept of the fundamental physical interaction</u>

The fundamental physical interaction is that reciprocal action onto each other of two bodies, which they exert by the interaction fluxes of the fields produced by their charges onto the interaction specific surfaces of each other. This reciprocal action is expressed by the fundamental physical forces constituted by the ratios of the interaction fluxes and interaction specific surfaces. The fundamental physical interaction may be marked as follows:

$$X–(\kappa)–Y \qquad (143),$$

in which : X and Y — the interacting parts,

κ — the quantum of the interaction-field.

D) <u>The interaction index</u>

a) <u>$d >> r_X$ and r_Y</u>

On the basis of (81), (82), (87) and (88):

$$\Phi_X^* / \Phi_Y^* = \Sigma_X^* / \Sigma_Y^* = u_X\, r_Y^2 / u_Y\, r_X^2 = f \qquad (144),$$

in which: : f — the interaction index of the interaction of X and Y.

If $u_X = u_Y$ and $r_X = r_Y$ — in case of which, according to (144), $f = 1$ — X and Y are equal in rank in their interaction.

Applying (144) to the solar system ($u_X = m_X$, $u_Y = m_Y$ and $f = f_G$) in every case f_G is larger than one in favor of the sun (X is the sun). Further, in the electric interaction of the nuclei and the electron ($u_X = q_X$, $u_Y = q_Y$ and $f = f_E$) $f_E > 1$ in favor of the nuclei (the Xs are the nuclei). Beginning from the lithium, in the electric interaction of the ions charged +1 and

the electron f_E is larger than one in favor of the electron (X is the electron). On the basis of (144):

$$f = u_X / r_X^2 \,//\, u_Y / r_Y^2 \qquad (145).$$

According to (145) the interaction index can be expressed as a ratio of the properties of X and Y. From all these it results that in the interaction of X and Y — and only in respect of the given interaction — the interaction index indicates the super-ordinate role of that interacting part in favor of which $f > 1$.

b) $\underline{d \sim r_X \text{ and } r_Y}$

On the basis of (85), (86), (89), (90), (27) and (28):

$$f = \Phi_X^* / \Phi_Y^* = \Sigma_X^* / \Sigma_Y^* = u_X (1 - \cos \alpha) / u_Y (1 - \cos \beta) \qquad (146).$$

2.2.2.3. The electronic manuscript of the article of the third stage

CLASSICAL GENERAL LAWS OF THE FIELD-MEDIATED INTERACTIONS AND FORCES

Physics needs general theories. Those unify, order and systematize the extant knowledge, raise to a higher level their comprehension, make them more manageable and last but not least make possible obtaining new knowledge. Their vulnerability resulting from their high level of generality stimulates the discovery of new facts aiming their verification, what helps the development and the strengthening of physics.

In the sense of this study, the field-mediated forces (further on *forces* for short) are the forces acting between two field sources, separated from each other and not being in immediate touch with each other, by the implication of the fields produced by them.

The unification of the forces is one of the problems of the present physics. The facts of the theoretical course needed for this are laws exhaustively verified experimentally. Accordingly, the scope of the intellect is rather large.

1) Classical general laws of the rectilinear-field-mediated interactions and forces

[Note: Further on "rectilinear interactions and forces" for short.]

1.1) Classical inductive general law of the rectilinear-field-mediated forces

1.1.1) The inductive unification of the gravitational and electrostatic classical force laws

Be X and Y two spherical particles, with the radii R_X and R_Y, the masses m_X and m_Y, the charges q_X and q_Y, with uniform mass and charge distributions, with their centers at the distance r from each other. The expressions of the gravitational and electrostatic forces, F_G and F_E, acting between X and Y can be written on the basis of the laws of Newton and, respectively, of Coulomb:

$$F_G = G\,(m_X\,m_Y / r^2) \quad (1),$$

$$F_E = (1 / 4\,\pi\,\varepsilon_0)\,(q_X\,q_Y / r^2) \quad (2),$$

in which: G — the constant of Newton, [$N\,m^2 / kg^2$],

ε_0 — the electrostatic permitivity of the vacuum, [$C^2 / N\,m^2$].

It can be ascertained that:

1) the structure of the expression of each law of rectilinear force (further on *force law* for short) consists of a constant and a variable element;

2) the variable structural element of each force law has two sub-elements: one is the product of the variable physical quantities characterizing the particular field sources of X and Y, the other is the r^2;

3) the expressions of the force laws are structurally roughly identical; they differ from each other only in their constant structural element: namely the expression of the constant of Newton does not contain the product $4\,\pi$ and the electrostatic permitivity of the vacuum is in the denominator.

On the basis of the law of Gauss, the gravitational and electrostatic fluxes Φ_{XG} and Φ_{YG}, and, respectively, Φ_{XE} and Φ_{YE} of X and Y:

$$\Phi_{XG} = 4\,\pi\,G\,m_X \quad (3) \quad \text{and} \quad \Phi_{YG} = 4\,\pi\,G\,m_Y \quad (4),$$

$$\Phi_{XE} = q_X / \varepsilon_0 \quad (5) \quad \text{and} \quad \Phi_{YE} = q_Y / \varepsilon_0 \quad (6).$$

On the basis of (1) − (6):

$$F_G = \Phi_{XG}\,(m_Y / 4\,\pi\,r^2) = \Phi_{YG}\,(m_X / 4\,\pi\,r^2) \quad (7),$$

$$F_E = \Phi_{XE}\,(q_Y / 4\,\pi\,r^2) = \Phi_{YE}\,(q_X / 4\,\pi\,r^2) \quad (8).$$

It can be ascertained that:

1) carrying a flux in each of the expressions of the force laws makes them structurally completely identical;

2) the product $4\,\pi$ and the r^2 belong together; the product $4\,\pi\,r^2$ is a structural element of the expressions of the force laws;

3) the causes of the structural differences existing in the original expressions of the force laws must exclusively be looked for in the expressions of the fluxes;

4) the fluxes exclusively depend on the variable physical quantities characterizing the field sources;

5) $m_X = m_Y = 1$ kg $\Rightarrow$ $\Phi_{XG} = \Phi_{YG} = 4\,\pi\,G$ N m^2 / kg (9),

$q_X = q_Y = 1$ C $\Rightarrow$ $\Phi_{XE} = \Phi_{YE} = 1 / \varepsilon_0$ N m^2 / C (10).

6) the $4\,\pi\,G$ and the $1 / \varepsilon_0$ can be considered gravitational, and, respectively, electrostatic specific fluxes.

The *specific flux* is the flux produced by the individual and joint units of the physical quantities characterizing the

field source.

The concept of *specific flux* is of theoretical character though, but it proceeds from a domain exhaustively checked experimentally and results from the field theory generally accepted at present. At the same time, it provides a clear and unified interpretation for the force constants.

$$\gamma_0 = 4 \pi G \quad (11) \quad \text{and} \quad \delta_0 = 1 / \varepsilon_0 \quad (12),$$

in which: γ_0 — the specific flux in vacuum of the gravitational field, [N m^2 / kg^2],

δ_0 — the specific flux in vacuum of the electrostatic field, [N m^2 / C^2].

On the basis of (1), (2), (11) and (12):

$$F_G = \gamma_0 (m_X m_Y / 4 \pi r^2) \quad (13),$$

$$F_E = \delta_0 (q_X q_Y / 4 \pi r^2) \quad (14).$$

It can be ascertained that:

1) a complete structural identity exists, on the one hand between the expressions of the gravitational and electrostatic force laws, and, on the other between the units of measure of the force constants;

2) exclusively the particularities of their field sources differentiate, on the one hand the expressions of the gravitational and electrostatic force laws, and, on the other the units of measure of the force constants.

The unified structure of the rectilinear forces:

(rectilinear-field source X)—(rectilinear field)—(rectilinear-field source Y) (15),

and the unified expression of their laws:

$$F_R = \varphi_{0R} u_{XR} u_{YR} / 4 \pi r^2 \quad (16),$$

in which: F_R — the rectilinear force acting between X and Y, [N],

φ_{0R} — the specific flux of the rectilinear field, [N m^2 / U^2],

u_{XR} and u_{YR} — the rectilinear-field sources of X and Y, respectively, [U].

1.1.2) <u>The generalization of the unified expressions of the force laws</u>

The expression (16) reflects the structural unity of the gravitational and electrostatic forces. At present, it can be considered a fact theoretically relatively grounded and experimentally relatively verified that the structure of the strong force also coincide with the structure of the rectilinear forces. This is supported by the following arguments as well:

1) numerous experimental facts refer to that the strong force is mediated by a pion field;

2) to each known rectilinear force, an organization level of the matter can be assigned in which it attains to a determinant role: the gravitational one on the cosmic one, the electrostatic one on the atomic one and the strong force plays a determinant role on the nuclear organization level;

3) each known rectilinear force attains to a determinant role on the organization level characteristic to it so that it is much stronger than the rectilinear force determining the material organization level preceding from above: thus the electrostatic force, on the atomic level, is much stronger than the gravitational force, and on the nuclear level, the strong force is much stronger than the electrostatic force.

On the basis of the above, the effect of the expression (16) can be extended to the strong force and it can be generalized as well. For this reason, the expression (16) can be considered a classical inductive general law of the rectilinear-field-mediated forces (further on *general rectilinear-force law* for short).

1.1.3) Corroborations

1.1.3.1) The deduction of the gravitational law of Newton

$$\varphi_{0R} = \gamma_0 \quad (17), \quad u_X = m_X \quad (18) \quad \text{and} \quad u_Y = m_Y \quad (19).$$

On the basis of (16) − (19) and (11), the gravitational law of Newton can be deducted.

1.1.3.2) The deduction of the law of Coulomb

$$\varphi_{0R} = \delta_0 \quad (20), \quad u_X = q_X \quad (21) \quad \text{and} \quad u_Y = q_Y \quad (22).$$

On the basis of (16), (20) − (22) and (12), the law of Coulomb can be deducted.

1.1.4) Consequences

1.1.4.1) The general law of the flux of rectilinear field [Note: Further on "rectilinear flux" for short.]

It can be seen from (7) and (8) that as parts of the expressions of the force laws, the gravitational and electrostatic fluxes can also be generalized. On the basis of (7), (8), (13) and (14:):

$$\Phi_{XG} = \gamma_0 \, m_X \quad (23) \quad \text{and} \quad \Phi_{YG} = \gamma_0 \, m_Y \quad (24),$$

$$\Phi_{XE} = \delta_0 \, q_X \quad (25) \quad \text{and} \quad \Phi_{YE} = \delta_0 \, q_Y \quad (26).$$

On the basis of (23) − (26) and (16):

$$\Phi_{XR} = \varphi_{0R} \, u_{XR} \quad (27) \quad \text{and} \quad \Phi_{YR} = \varphi_{0R} \, u_{YR} \quad (28),$$

in which: Φ_{XR} and Φ_{YR} — the fluxes of the rectilinear fields of X and Y, respectively, [N m^2 / U].

1.1.4.2) <u>The strong field</u>

The force acting between the strong-field sources is mediated by the strong field. This consequence corroborates the hypothesis of Yukawa referring to the pion field.

1.1.4.3) <u>The generalization of the concept of *charge*</u>

The primary source of the strong field may be termed *strong charge*. Similarly to the electric and strong charges, the mass can be physically interpreted for the *gravitational charge*. On the basis of this:

$$m_X = q_{XG} \quad (29) \quad \text{and} \quad m_Y = q_{YG} \quad (30),$$

in which: q_{XG} and q_{YG} — the gravitational charges of X and Y, respectively, [kg].

1.1.4.4) <u>The structure of the strong force</u>

The strong force is structurally identical with the gravitational and electrostatic forces. Its structure is reflected by the expression (16):

$$F_S = \sigma_0 \, u_{XS} \, u_{YS} / 4 \, \pi \, r^2) \quad (31),$$

in which: F_S — the strong force acting between X and Y, respectively, [N],

σ_0 — the specific flux of the strong force, [N m^2 / U^2],

u_{XS} and u_{YS} — the strong-field sources of X and Y, respectively, [U].

1.1.4.5) <u>Classical hypothetic law of the strong force</u>

Be X a neutron and Y a proton, which by their q_{XS} and q_{YS} strong charges — according to the hypothesis of Yukawa — produce strong fields around themselves. The unit of measure of the strong charge may be the *Yukawa*, [Y]. The Yukawa may be defined as the strong-charge quantity of the nucleon.

$$u_{XS} = q_{XS} \, [(r - r_{mS})^a \, (r_{MS} - r)^b]^{1 \, / \, 2k} \, / \, R_{XS}^{(a + b) \, / \, 2k} \quad (32),$$

$$u_{YS} = q_{YS} [(r - r_{mS})^i (r_{MS} - r)^n]^{1 / 2k} / R_{YS}^{(i + n) / 2k} \quad (33),$$

$$R_{XS} = (a\, r_{MS} + b\, r_{mS}) / (a + b) \quad (34) \quad \text{and} \quad R_{YS} = (i\, r_{MS} + n\, r_{mS}) / (i + n) \quad (35),$$

in which: r_{mS} — the minimum radius of action of the strong force between X and Y, [m],

r_{MS} — the maximum radius of action of the strong force between X and Y, [m],

R_{XS} and R_{YS} — the distances of the maximum strong-flux of X and Y, respectively, [m],

a, b,i, k and n — nonzero natural numbers.

On the basis of (31) − (33):

$$F_S = \sigma_0\, q_{XS}\, q_{YS} [(r - r_{mS})^{a + i} (r_{MS} - r)^{b + n}]^{1 / k} / 4\, \pi\, r^2\, R_{XS}^{(a + b) / 2k}\, R_{YS}^{(i + n) / 2k} \quad (36).$$

1.1.4.6) Hypothesis of the *weak force*

The forces mediated by the rectilinear fields constituted by the electron or the positron with the neutrino or the anti-neutrino may be termed *weak forces*. For example, the nucleon can dispose of a weak rectilinear field.

Be a neutron and a proton, which through their weak charges, produce a weak rectilinear field around themselves. From the indeterminancy principle of Heisenberg:

$$r_{aW} \approx h / 2\, \pi\, m_{0e}\, c \approx 100\, r_{aS} \quad (37),$$

in which: r_{aW} and r_{aS} — the radii of action of the weak and, respectively, strong forces, [m],

h — the constant of Planck, [J s],

m_{0e} — the rest mass of the electron, [kg],

c — the velocity of the light, [m / s].

If $r \le r_{aW}$, a weak force acts between the neutron and the proton. This system may be termed *weak deuteron*. The weak deuteron may be comprehended for such a virtual state of equilibrium, which is characterized by the equilibrium of the leptons “exchanged” by the neutron and the proton. Depending on the nature of the “exchanged” leptons, there can be four kinds of weak deuterons:

$n \rightarrow p + e^- + \nu'$, namely $\quad n–(e^-,\nu')–p \quad (38),$

$p \rightarrow n + e^+ + \nu$, namely $\quad n–(e^+,\nu)–p \quad (39),$

$p + e^- \rightarrow n + \nu$, namely $n–(e^-,\nu)–p$ (40),

$n + e^+ \rightarrow p + \nu'$, namely $n–(e^+,\nu')–p$ (41).

1.1.5) The physical interpretation of the general rectilinear-force law

A general law is expectable to lead to a higher level of the cognition and comprehension. Therefore, the question arises that what cognitive results the general rectilinear-force law — namely the introduction of the concept of *specific flux* and the discovery of the general character of the product $4 \pi r^2$ — implies in the field of the interpretation of the forces.

Already the expressions (1) and (2) of the force laws reflect the interaction nature of the forces by containing double, as products, the variable physical quantities characterizing their particular field sources. Accordingly, in the rectilinear-field-mediated interaction (further on *rectilinear interaction* for short) of X and Y there are two forces: the first one, with which X acts onto Y, and the second one, with which Y acts onto X. For this reason, it is specially to be examined that how and to what extent the single expression of the general rectilinear-force law is fit to differentiate these two forces from each other.

With rearranging the physical quantities, as well as on the basis of (27) and (28), the expression (16):

$$F_R = F_{XR} = u_{YR} (\Phi_{XR} / 4 \pi r^2) = u_{YR} I_{XR} \quad (42),$$

$$F_R = F_{YR} = u_{XR} (\Phi_{YR} / 4 \pi r^2) = u_{XR} I_{YR} \quad (43),$$

in which: F_{XR} — the rectilinear force exerted by X onto Y, [N],

F_{YR} — the rectilinear force exerted by Y onto X, [N],

I_{XR} and I_{YR} — the intensities of the rectilinear fields of X and Y, respectively, [N / U].

It can be ascertained hat:

1) the expressions (42) and (43) do not enrich the extant knowledge; for X and Y, as particles being in the fields of each other, on the basis of the present knowledge, it can be written:

$$F_G = F_{XG} = m_Y g_X \quad (44) \quad \text{and} \quad F_G = F_{YG} = m_X g_Y \quad (45),$$

$$F_E = F_{XE} = q_{YE} E_X \quad (46) \quad \text{and} \quad F_E = F_{YE} = q_{XE} E_Y \quad (47),$$

in which: F_{XG} and F_{XE} — the gravitational and, respectively, the electrostatic forces exerted by X onto Y, [N],

F_{YG} and F_{YE} — the gravitational and, respectively, the electrostatic forces exerted by Y onto X, [N],

g_X and g_Y — the intensities of the gravitational fields of X and Y, respectively, [N / kg],

E_X and E_Y — the intensities of the electrostatic fields of X and Y, respectively, [N / C];

2) according to (42) and (43), the force acting between X and Y is the interaction between the field of a part and the field source of the other part;

3) u_{XR} and u_{YR}, as well as I_{XR} and I_{YR} are physical quantities independent of the interaction of X and Y, namely they are not physical quantities characteristic to interactions.

Further, the expression (16) can still be written:

$$F_R = F_{XR} = \Phi_{XR} (u_{YR} / 4 \pi r^2) \quad (48),$$

$$F_R = F_{YR} = \Phi_{YR} (u_{XR} / 4 \pi r^2) \quad (49).$$

It can be ascertained that:

1) according to (48) and (49), the rectilinear force acting between X and Y is the interaction between the rectilinear flux of a part and the superficial charge density of the other part, calculated for the surface $4 \pi r^2$;

2) the flux of a part does not fall exclusively onto the surface of the other part, as well as the surface $4 \pi r^2$ is not the surface of the other part;

3) the expressions (42) − (47) do not express the spatiality of X and Y, as well as of their charges, they treat them as points.

Consequently, with the physical quantities available, the general rectilinear-force law is not capable of interpreting suitably the rectilinear forces for reciprocal actions of the parts onto each other. For this, interaction-specific concepts and physical quantities are needed.

1.2) <u>Classical deductive general law of the rectilinear-field-mediated interactions</u> [Note: Further on “general rectilinear interaction law” for short.]

1.2.1) <u>The introduction of interaction concepts</u>

1.2.1.1) <u>The general concept of *rectilinear interaction flux*</u>

The *rectilinear interaction flux* is that portion of the rectilinear flux of an interacting part, with which it acts onto the surface of the other part.

I) $r >> R_X$ and R_Y

$$\Phi_{XR}^* = \Phi_{XR}\, S_{XI}^* / 4\pi r^2 \quad (50) \quad \text{and} \quad \Phi_{YR}^* = \Phi_{YR}\, S_{YI}^* / 4\pi r^2 \quad (51),$$

in which: Φ_{XR}^* and Φ_{YR}^* — the rectilinear interaction fluxes of X and Y, respectively, [N m^2 / U],

S_{XI}^* and S_{YI}^* — the rectilinear interaction-flux surfaces of X and Y, respectively, in the case (I), [m^2].

It can be ascertained that:

1) the expressions of the rectilinear interaction fluxes bring to surface the physical signification and the role of the structural element $4\pi r^2$ of the general rectilinear-force law: the product $4\pi r^2$ denotes the surface of the sphere with the radius r and it is the denominator of the fraction which establishes the portion of the rectilinear fluxes of X and Y, respectively, that fall onto the surfaces of Y and X, respectively;

2) with the exception of the field source of the other part, the expression of the rectilinear interaction flux of a part entirely covers the expression of the general rectilinear-force law with respect to the physical quantities.

$$S_{\backslash XI}^* = \pi R_Y^2 \quad (52) \quad \text{and} \quad S_{YI}^* = \pi R_X^2 \quad (53).$$

On the basis of (50), (27) and (52) and, respectively, of (51), (28) and (53):

$$\Phi_{XR}^* = \varphi_{0R}\, u_{XR}\, R_Y^2 / 4 r^2 \quad (54) \quad \text{and} \quad \Phi_{YR}^* = \varphi_{0R}\, u_{YR}\, R_X^2 / 4 r^2 \quad (55).$$

II) $r \sim R_X$ and R_Y

$$\Phi_{XR}^* = \Phi_{XR}\, S_{XII}^* / 4\pi r^2 \cos^2\alpha \quad (56) \quad \text{and} \quad \Phi_{YR}^* = \Phi_{YR}\, S_{YII}^* / 4\pi r^2 \cos^2\beta \quad (57).$$

in which: S_{XII}^* and S_{YII}^* — the rectilinear interaction-flux surfaces of X and Y, respectively, in the case (II), [m^2],

α and β — the angles formed by the straight line linking the centers of X and Y and the tangents drawn from the centers of X and Y, respectively, to the surfaces of Y and X, respectively.

$$S_{XII}^* = 2\pi r^2 \cos^2\alpha\,(1 - \cos\alpha) \quad (58) \quad \text{and} \quad S_{YII}^* = 2\pi r^2 \cos^2\beta\,(1 - \cos\beta) \quad (59).$$

On the basis of (56), (27) and (58) and, respectively, of (57), (28) and (59):

$$\Phi_{XR}^* = \varphi_{0R}\, u_{XR}\,(1 - \cos\alpha) / 2 \quad (60) \quad \text{and} \quad \Phi_{YR}^* = \varphi_{0R}\, u_{YR}\,(1 - \cos\beta) / 2 \quad (61).$$

1.2.1.2) The general concept of *rectilinear interaction-flux specific surface*

I) $r >> R_X$ and R_Y

On the basis of (48), (50) and (52) and, respectively, of (49), (51) and (53):

$$F_R = F_{XR} = \Phi_{XR}^* (u_{YR} / \pi R_Y^2) \quad (62) \quad \text{and} \quad F_R = F_{YR} = \Phi_{YR}^* (u_{XR} / \pi R_X^2) \quad (63).$$

It can be ascertained that:

1) according to (62) and (63), the rectilinear force acting between X and Y is the rectilinear interaction between the rectilinear interaction-flux of a part and a superficial charge density of the other part, calculated for the rectilinear interaction-flux surface of the first part;

2) the rectilinear interaction-flux of a part exclusively falls on its rectilinear interaction-flux surface determined by the radius of the other part;

3) through the radii of X and Y, the expressions (62) and (63) reflect the spatiality of them, as well as of their charges;

4) in the case of the rectilinear interactions the third law of Newton is applicable.

However the charge of a part cannot be considered to be limited to the rectilinear interaction-flux surface of the other part, namely to its own central cross-section, because the spatial distribution of the charges is three-dimensional. For this reason, (62) and (63) can be written:

$$F_R = F_{XR} = \Phi_{XR}^* / (\pi R_Y^2 / u_{YR}) \quad (64) \quad \text{and} \quad F_R = F_{YR} = \Phi_{YR}^* / (\pi R_X^2 / u_{XR}) \quad (65).$$

The ratio of the rectilinear interaction-flux surface of a part and the charge of the other part may be termed *rectilinear interaction-flux specific surface*. The expressions of the rectilinear interaction-flux specific surfaces of X and Y:

$$\Sigma_{XR}^* = S_{XI}^* / u_{YR} = \pi R_Y^2 / u_{YR} \quad (66) \quad \text{and} \quad \Sigma_{YR}^* = S_{YI}^* / u_{XR} = \pi R_X^2 / u_{XR} \quad (67).$$

II) $r \sim R_X$ and R_Y

$$F_{XR} = \sigma_{XR} \Phi_{XR}^* \quad (68) \quad \text{and} \quad F_{YR} = \sigma_{YR} \Phi_{YR}^* \quad (69),$$

in which: σ_{XR} and σ_{YR} — the rectilinear-force factors of F_X and F_Y, respectively, [U / m^2].

According to the third law of Newton:

$$F_{XR} = F_{YR} = F_R \quad \Rightarrow \quad \Phi_{XR}^* / \Phi_{YR}^* = \sigma_{YR} / \sigma_{XR} \qquad (70).$$

On the basis of (70), (56), (57), (27) and (28):

$$\sigma_{YR} / \sigma_{XR} = u_{XR}\, S_{XII}^*\, \cos^2\beta / u_{YR}\, S_{YII}^*\, \cos^2\alpha \qquad (71).$$

$$\sigma_{XR} = u_{YR}\, \cos^2\alpha / S_{XII}^* \qquad (72) \quad \text{and} \quad \sigma_{YR} = u_{XR}\, \cos^2\beta / S_{YII}^* \qquad (73).$$

$$r^2 = R_Y^2 / \sin^2\alpha = R_X^2 / \sin^2\beta \qquad (74).$$

On the basis of (72), (58) and (74), and, respectively, of (73), (59) and (74):

$$\sigma_{XR} = u_{YR}\, (1 + \cos\alpha) / 2\,\pi\, R_Y^2 \qquad (75) \quad \text{and} \quad \sigma_{YR} = u_{XR}\, (1 + \cos\beta) / 2\,\pi\, R_X^2 \qquad (76).$$

As the superficial charge distribution cannot be interpreted physically in this case either:

$$\Sigma_{XR}^* = 1 / \sigma_{XR} = 2\,\pi\, R_Y^2 / u_{YR}\, (1 + \cos\alpha) \qquad (77),$$

$$\Sigma_{YR}^* = 1 / \sigma_{YR} = 2\,\pi\, R_X^2 / u_{XR}\, (1 + \cos\beta) \qquad (78).$$

1.2.1.3) <u>The general rectilinear-interaction law</u>

On the basis of (64) and (66), as well as of (65) and (67), and, respectively, of (68) and (77), as well as of (69) and (78):

$$F_{XR} = \Phi_{XR}^* / \Sigma_{XR}^* \qquad (79) \quad \text{and} \quad F_{YR} = \Phi_{YR}^* / \Sigma_{YR}^* \qquad (80).$$

It can be ascertained that:

1) the general rectilinear interaction law consists of two general rectilinear-force laws: the first one refers to the rectilinear force exerted by X onto Y, the second one to the rectilinear force exerted by Y onto X;

2) between these two general rectilinear-force laws, a quantitative identity and a qualitative, expression difference exist simultaneously;

3) according to these general rectilinear-force laws, the force is the interaction between the interaction flux of a part and its interaction-flux specific surface, determined by variable physical quantities characterizing properties of the other part;

4) these two general rectilinear-force laws are formed of interaction-specific variable physical quantities, which manifest itself in that, in case of these two forces the same physical quantities generally differ from each other both quantitatively and qualitatively.

1.2.2) Corroboration

The deduction of the general rectilinear-force law

On the basis of (79), (54) and (66), as well as of (80), (55) and (67), and, respectively, of (79), (60) and (77), as well as of (80), (61) and (78), the expression (16) of the general rectilinear-force law can be deducted.

1.2.3) Consequences

1.2.3.1) The deduction of the particular rectilinear interaction laws

From the general rectilinear interaction law, the particular — namely the gravitational, the electrostatic, the magnetic, the strong and the weak — interaction laws can be deducted. For example, applying the expressions (79) and (80) to the gravitational interaction, the gravitational interaction law can be obtained:

$$F_{XG} = \Phi_{XG}^* / \Sigma_{XG}^* \quad (81) \quad \text{and} \quad F_{YG} = \Phi_{YG}^* / \Sigma_{YG}^* \quad (82).$$

in which: F_{XG} — the gravitational force exerted by X onto Y, [N],

F_{YG} — the gravitational force exerted by Y onto X, [N],

Φ_{XG}^* and Φ_{YG}^* — the gravitational interaction fluxes of X and Y, respectively, [N m^2 / kg],

Σ_{XG}^* and Σ_{YG}^* — the gravitational interaction-flux specific surfaces of X and Y, respectively, [m^2 / kg].

$$\varphi_{0R} = \gamma_0 \quad (83) \quad \text{and} \quad u_{XR} = q_{XG} \quad (84) \quad \text{and} \quad u_{YR} = q_{YG} \quad (85),$$

I) $r >> R_X$ and R_Y

On the basis of (54), (83) and (84), and, respectively, of (55), (83) and (85):

$$\Phi_{XG}^* = \gamma_0 \, q_{XG} \, R_Y^2 / 4 \, r^2 \quad (86) \quad \text{and} \quad \Phi_{YG}^* = \gamma_0 \, q_{YG} \, R_X^2 / 4 \, r^2 \quad (87).$$

On the basis of (66), (83) and (84), and, respectively, of (67), (83) and (85):

$$\Sigma_{XG}^* = \pi \, R_Y^2 / q_{YG} \quad (88) \quad \text{and} \quad \Sigma_{YG}^* = \pi \, R_X^2 / q_{XG} \quad (89).$$

II) $r \sim R_X$ and R_Y

On the basis of (60), (83) and (84), and, respectively, of (61), (83) and (85):

$$\Phi_{XG}^* = \gamma_0 \, q_{XG} \, (1 - \cos \alpha) / 2 \quad (90) \quad \text{and} \quad \Phi_{YG}^* = \gamma_0 \, q_{YG} \, (1 - \cos \beta) / 2 \quad (91).$$

On the basis of (77), (83) and (84), and, respectively, of (78), (83) and (85):

$$\Sigma_{XG}^* = 2 \, \pi \, R_Y^2 / q_{YG} \, (1 + \cos \alpha) \quad (92) \quad \text{and} \quad \Sigma_{YG}^* = 2 \, \pi \, R_X^2 / q_{XG} \, (1 + \cos \beta) \quad (93).$$

On the basis of (81), (86) and (88), as well as of (82), (87) and (89), and, respectively, of (81), (90), (92) and (74), as well as of (82), (91), (93) and (74), the gravitational law of Newton can be deducted.

1.2.3.2) The graviton

The interaction fields are quantified. The quantum of the gravitational field is the graviton. Facts support the hypothesis that in the table of the “elementary” particles in conformity with the rest mass, the graviton is situated in the first place, preceding the photon:

(1) in this table, the field quanta regularly precede the smallest field sources;

(2) the displacement of the apparent positions of the stars in the gravitational field of the sun proves that the photon is a gravitational field source;

(3) the experimental detection of the gravitational waves is more difficult than the detection of the electromagnetic waves.

1.2.3.3) The general rectilinear interaction index

I) $r >> R_X$ and R_Y

On the basis of (54) and (55), as well as of (66) and (67):

$$f = \Phi_{XR}^* / \Phi_{YR}^* = \Sigma_{XR}^* / \Sigma_{YR}^* = u_{XR} R_Y^2 / u_{YR} R_X^2 \quad (94),$$

in which: : f — the general rectilinear interaction index of the interaction of X and Y.

If $u_{XR} = u_{YR}$ and $R_X = R_Y$ — in case of which, according to (94), $f = 1$ — X and Y are equal in rank in their rectilinear interaction. Applying (94) to the solar system ($u_{XR} = q_{XG}$, $u_{YR} = q_{YG}$ and $f = f_G$) in every case the gravitational interaction index is larger than one in favor of the sun (X is the sun). Further, in the electrostatic interaction of the nuclei and the electron ($u_{XR} = q_{XE}$, $u_{YR} = q_{YE}$ and $f = f_E$) $f_E > 1$ in favor of the nuclei (the Xs are the nuclei). Beginning from the lithium, in the electrostatic interaction of the ions charged +1 and the electron the electrostatic interaction index is larger than one in favor of the electron (X is the electron). On the basis of (94):

$$f = u_{XR} / R_X^2 \,//\, u_{YR} / R_Y^2 \quad (95).$$

According to (95) the general rectilinear interaction index can be expressed as a ratio of the properties of X and Y. From all these it results that in the rectilinear-field-mediated interaction of X and Y — and only in respect of the given rectilinear interaction — the general rectilinear interaction index indicates the super-ordinate role of that interacting part in favor of which $f > 1$.

II) $r \sim R_X$ and R_Y

On the basis of (60) and (61), as well as of (77) and (78):

$$f = \Phi_{XR}^* / \Phi_{YR}^* = \Sigma_{XR}^* / \Sigma_{YR}^* = u_{XR} (1 - \cos \alpha) / u_{YR} (1 - \cos \beta) \quad (96).$$

2) Classical general laws of the field-mediated interactions

In common with the rectilinear-field-mediated interactions, the magnetic interaction is a part of the class of the field-mediated interactions.

Be X and Y two spherical particles, as described under point (1.1.1), at the distance $r >> R_X$

and R_Y from each other, being in motion in a common system of co-ordinates, in the same plane, on straight lines, at the velocities v_X and v_Y, respectively, considerably smaller than the velocity of the light, and producing around themselves the gravitational, electrostatic and, respectively, magnetic fields with the intensities g_X and g_Y, E_X and E_Y, and, respectively, B_X and B_Y. The expressions of the magnetic forces acting between X and Y, F_{XM} and F_{YM}, can be written on the basis of the laws of Laplace, Lorentz, Biot and Savart:

$$F_{XM} = \mu_0 (q_X q_Y v_X v_Y \sin \zeta \sin \iota / 4 \pi r^2) \quad (97),$$

$$F_{YM} = \mu_0 (q_X q_Y v_X v_Y \sin \eta \sin \theta / 4 \pi r^2) \quad (98),$$

in which: F_{XM} — the magnetic force exerted by X onto Y, [N],

F_{YM} — the magnetic force exerted by Y onto X, [N],

μ_0 — the magnetic permeability of the vacuum, [Wb / A m],

ζ and η — the angles formed by the straight line linking the centers of X and Y with v_X and v_Y, respectively,

θ and ι — the angles formed by the magnetic induction vectors of Y and X with v_X and v_Y, respectively.

2.1) Classical inductive general law of the field-mediated interactions

2.1.1) The induction of the classical general law of the field-mediated interactions

On the basis of the definitions of the intensities of the gravitational and electrostatic fields, as well as of the law of Lorentz:

$$F_{XG} = m_Y g_X \quad (99) \quad \text{and} \quad F_{YG} = m_X g_Y \quad (100),$$

$$F_{XE} = q_Y E_X \quad (101) \quad \text{and} \quad F_{YE} = q_X E_Y \quad (102),$$

$$F_{XM} = q_Y v_Y B_X \sin \iota \quad (103) \quad \text{and} \quad F_{YM} = q_X v_X B_Y \sin \theta \quad (104).$$

Generalizing:

$$F_X = u_Y I_X \quad (105) \quad \text{and} \quad F_Y = u_X I_Y \quad (106),$$

in which: F_X — the field-mediated force exerted by X onto Y, [N],

F_Y — the field-mediated force exerted by Y onto X, [N],

u_X and u_Y — the field sources of X and Y, respectively, [U],

I_X and I_Y — the intensities of the fields of X and Y, respectively, [N / U].

On the one hand, it can be ascertained that the expressions (105) and (106) are valid for the gravitational, electrostatic and magnetic interactions of X and Y. On the other hand, a strong force exerted, for example, by X onto Y preconditions the existence of the strong charge of Y in the strong field of X. Therefore, the expressions (105) and (106) can be considered the general force laws of a classical inductive general law of the field-mediated interactions. However, according to ascertainments under point (1.1.5) as well, the expressions (105) and (106) are subject to improvement.

The structure of the field-mediated interactions:

$$\text{(field source X)—(field)—(field source Y)} \quad (107).$$

2.1.2) Corroborations

2.1.2.1) The deduction of the gravitational law of Newton

According to the law of Gauss:

$$g_X = G m_X / r^2 \quad (108) \quad \text{and} \quad g_Y = G m_Y / r^2 \quad (109).$$

On the basis of (99) and (108), and, respectively, of (100) and (109), the expression (1) of the gravitational law of Newton can be deducted.

2.1.2.2) The deduction of the law of Coulomb

According to the law of Gauss:

$$E_X = q_X / 4 \pi \varepsilon_0 r^2 \quad (110) \quad \text{and} \quad E_Y = q_Y / 4 \pi \varepsilon_0 r^2 \quad (111).$$

On the basis of (101) and (110), and, respectively, of (102) and (111), the expression (2) of the law of Coulomb can be deducted.

2.1.2.3) The deduction of the law of Laplace, Lorentz, Biot and Savart

According to the law of Biot and Savart:

$$B_X = \mu_0 q_X v_X \sin \zeta / 4 \pi r^2 \quad (112) \quad \text{and} \quad B_Y = \mu_0 q_Y v_Y \sin \eta / 4 \pi r^2 \quad (113).$$

On the basis of (103) and (112), and, respectively, of (104) and (113), the expressions (97) and (98) of the laws of Laplace, Lorentz, Biot and Savart can be deducted.

2.1.3) Consequences

2.1.3.1) The magnetic specific flux

Considering the electric charge and its velocity to be the dimensional variable physical quantities characterizing the magnetic-field sources, according to its dimensions, the magnetic permeability constant can be considered the specific flux in vacuum of the magnetic field. On the basis of the law of Biot and Savart, as well as of the general definition of the field flux, a definition of the magnetic specific flux can be given:

$$\int (\sin \zeta \cos \omega / r^2) \, dS = 4 \pi / q_X v_X \quad \Rightarrow \quad \Phi_{XM} = \mu_0 \ \text{Wb} \qquad (114),$$

in which: S — a surface satisfying the condition (114), [m^2],

ω — the angle between the vectors $\mathbf{B_X}$ and $\mathbf{dS}$.

2.1.3.2) The emissive and absorptive aspects of the field sources

In generalizing the intensities of the fields, the necessity arises of making quantitative distinctions between two aspects of the field sources. A field source generally emits a field, and by means of the virtual field quanta it can act to another field source — this aspect of the field source may be characterized as *emissive*. Further, a field source can absorb the virtual field quanta of another field source, and by this means it can bear the action of the respective field source — this aspect of the field source may be characterized as *absorptive*. At the same time, there could be circumstances under which one or both aspects of a field source are missing. These cases may be characterized as *emissively neutral,* and, respectively, *absorptively neutral*. For example, on the direction of its velocity, a magnetic field source has magnetic emissive neutrality, and in case when the direction of its velocity coincides with the direction of the magnetic induction vector of its interacting magnetic-field source, it has absorptive neutrality.

2.1.3.3) <u>The general law of the intensities of fields</u>

Discovering the general law of the intensities of fields — likewise the general law of the rectilinear fluxes, in the case of the rectilinear forces — becomes only possible by quantitatively distinguishing between the emissive and absorptive aspects of the field sources. Generalizing on the basis of (11), (12) and (107) − (112):

$$I_X = \varphi_0 \, u_{Xe} / 4 \pi r^2 \quad (115) \quad \text{and} \quad I_Y = \varphi_0 \, u_{Ye} / 4 \pi r^2 \quad (116),$$

in which: φ_0 — the specific flux of the fields, [N m^2 / U^2],

u_{Xe} and u_{Ye} — the emissive field sources of X and Y, respectively, [U].

2.1.3.4) <u>The reconsideration of the classical inductive general law of the field-mediated interactions</u>

Taking into account the considerations under point (2.1.3.2), the expressions (105) and (106) must be reconsidered by specifying the field-source aspects implied:

$$F_X = u_{Ya} \, I_X \quad (117) \quad \text{and} \quad F_Y = u_{Xa} \, I_Y \quad (118),$$

in which: u_{Xa} and u_{Ya} — the absorptive field sources of X and Y, respectively, [U].

On the basis of (117) and (115), and, respectively, of (118) and (116):

$$F_X = \varphi_0 \, u_{Xe} \, u_{Ya} / 4 \pi r^2 \quad (119) \quad \text{and} \quad F_Y = \varphi_0 \, u_{Ye} \, u_{Xa} / 4 \pi r^2 \quad (120).$$

2.1.3.5) <u>The quantitative equality of the rectilinear emissive and absorptive field sources</u>

In the case of the rectilinear interactions, on the basis of (118), (119) and (16), and according to the third law of Newton:

$$(u_{Xe} \, u_{Ya} = u_{Xa} \, u_{Ye} = u_X \, u_Y) \Rightarrow (u_{Xe} = u_{Xa} = u_X \quad \text{and} \quad u_{Ye} = u_{Ya} = u_Y) \quad (121).$$

2.1.3.6) <u>The general qualitative and quantitative inequality of the magnetic emissive and absorptive field sources</u>

For the magnetic interaction of X and Y:

$$u_{XMe} = q_{Xe}\, v_X \sin\zeta \quad (122) \quad \text{and} \quad u_{YMa} = q_{Ya}\, v_Y \sin\iota \quad (123),$$

$$u_{YMe} = q_{Ye}\, v_Y \sin\eta \quad (124) \quad \text{and} \quad u_{XMa} = q_{Xa}\, v_X \sin\theta \quad (125).$$

It can be ascertained that, except v_X and v_Y, there are no other two variable physical quantities qualitatively identical with each other in the expressions (122) − (125). On the basis of (122) − (125) and (121):

$$u_{XMe} / u_{XMa} = \sin\zeta / \sin\theta \quad (126) \quad \text{and} \quad u_{YMe} / u_{YMa} = \sin\eta / \sin\iota \quad (127).$$

Generally:

$$(\sin\zeta / \sin\theta \neq 1 \quad \text{and} \quad \sin\eta / \sin\iota \neq 1) \Rightarrow (u_{XMe} \neq u_{XMa} \quad \text{and} \quad u_{YMe} \neq u_{YMa}) \quad (128).$$

2.1.3.7) <u>The general condition of the applicability of the third law of Newton</u>

On the basis of (119) and (120):

$$F_X = F_Y \Rightarrow u_{Xe}\, u_{Ya} = u_{Ye}\, u_{Xa} \quad (129).$$

For the case of the magnetic interaction, on the basis of (129), (122) − (125) and (121):

$$F_{XM} = F_{YM} \Rightarrow \sin\zeta \sin\iota = \sin\eta \sin\theta \quad (130).$$

2.2) <u>Classical deductive general law of the field-mediated interactions</u>

2.2.1) <u>The introduction of interaction concepts</u>

2.2.1.1) <u>The general concept of *interaction flux*</u>

$$\Phi_X^* = I_X\, S_{XI}^* \quad (131) \quad \text{and} \quad \Phi_Y^* = I_Y\, S_{YI}^* \quad (132),$$

in which: Φ_X^* and Φ_Y^* — the interaction fluxes of X and Y, respectively, [N m^2 / U].

2.2.1.2) <u>The general concept of *interaction-flux specific surface*</u>

$$F_X = \sigma_X\, \Phi_X^* \quad (133) \quad \text{and} \quad F_Y = \sigma_Y\, \Phi_Y^* \quad (134),$$

in which: σ_X and σ_Y — the force factors of F_X and F_Y, respectively, [U / m^2].

On the basis of (133), (117) and (131), and, respectively, of (134),(118) and (132):

$$\sigma_X = u_{Ya} / S_{XI}^* = u_{Ya} / \pi R_Y^2 \quad (135) \quad \text{and} \quad \sigma_Y = u_{Xa} / S_{YI}^* = u_{Xa} / \pi R_X^2 \quad (136).$$

$$\Sigma_X^* = 1 / \sigma_X = \pi R_Y^2 / u_{Ya} \quad (137) \quad \text{and} \quad \Sigma_Y^* = 1 / \sigma_Y = \pi R_X^2 / u_{Xa} \quad (138),$$

in which: Σ_X^* and Σ_Y^* — the interaction-flux specific surfaces of X and Y, respectively, [m^2 / U].

2.2.1.3) The general interaction law

On the basis of (133) and (137), and, respectively, of (134) and (138):

$$F_X = \Phi_X^* / \Sigma_X^* \quad (139) \quad \text{and} \quad F_Y = \Phi_Y^* / \Sigma_Y^* \quad (140).$$

2.2.2) Corroboration

The deduction of the classical deductive general law of the field-mediated interactions

On the basis of (139), (131) and (137), and, respectively, of (140), (132) and (138), the expressions (117) and (118) of the classical inductive general law of the field-mediated interactions can be obtained.

2.2.3) Consequences

2.2.3.1) Hypothesis of the generality of magnetism

It is a fact that an electric charge moving in a given system of co-ordinates is a double field source. On a structure-identity basis, the electric and magnetic interactions mediated by the electrostatic and, respectively, the magnetic fields are parts of the class of the field-mediated interactions, which interactions are subordinated to a single general law. Consequently, the limitedness of magnetism to electric magnetism has no theoretical ground. For this reason, it can be supposed that each type of charge in motion is a double field source.

2.2.3.2) Hypothetical gravitational magnetic interaction law and constant

The identity of structure of the expressions (13) and (14) of the gravitational and, respectively, electrostatic force laws substantiates the hypothesis of the structural identity of the expressions of the hypothetical gravitational magnetic interaction law and the expressions (97) and (98) of the electric magnetic interaction law:

$$F_{XGM} = \mu_{0G}\, q_{XG}\, q_{YG}\, v_X\, v_Y \sin\zeta \sin\iota / 4\pi r^2 \quad (141),$$

$$F_{YGM} = \mu_{0G}\, q_{XG}\, q_{YG}\, v_X\, v_Y \sin\eta \sin\theta / 4\pi r^2 \quad (142),$$

in which: F_{XGM} — the gravitational magnetic force exerted by X onto Y, [N],

F_{YGM} — the gravitational magnetic force exerted by Y onto X, [N],

μ_{0G} — the gravitational magnetic specific flux, [N s^2 / kg^2].

According to the formula of Maxwell:

$$c = 1 / (\varepsilon_0 \mu_0)^{1/2} \quad (143).$$

On the basis of (105) and (17):

$$c = (\delta_0 / \mu_0)^{1/2} \quad (144).$$

On the basis of extending the analogy of the gravitational and electrostatic interactions to the expression (106) and of (16):

$$c_g = (\gamma_0 / \mu_{0G})^{1/2} = (4 \pi G / \mu_{0G})^{1/2} \quad (145),$$

in which: c_g — the velocity of the graviton, [m / s].

According to to the postulate of Einstein:

$$c_g = c \quad (146).$$

On the basis of (107) and (108):

$$\mu_{0G} = 4 \pi G / c^2 = 9.31 \cdot 10^{-27} \text{ N } s^2 / kg^2 \quad (147).$$

For example:

($q_{XG} = q_{YG} = 10^3$ kg and $v_X = v_Y = 1$ m / s and0 $\zeta = \iota = \eta = \theta = \pi / 2$ rad

and $d = 100$ m) ⇒ ($F_{MG} = 7.41 \cdot 10^{-26}$ N).

2.2.3.3) The general concept of *field-mediated interaction*

A *field-mediated interaction* is that reciprocal action onto each other of two particles, which they exert by the interaction fluxes of the fields produced by their charges onto their interaction-flux specific surfaces. These reciprocal actions are expressed by the field-mediated forces constituted by the ratios of their interaction fluxes and interaction-flux specific surfaces. A field-mediated interaction may be marked as follows:

$$X–(\kappa)–Y \quad (148),$$

in which : X and Y — the interacting parts,

κ — the quantum of the interaction-field.

2.2.4) The emissive and absorptive interaction fluxes

2.2.4.1) Concepts and physical quantities

In its present acceptation, the concept of *flux* refers to the emissive flux of a field-source. Accordingly, the concept and constant physical quantity of *specific flux* reflects a property of a field source existing in its isolated state as well. At the same time, a field flux can also be absorptive. The concept of *absorptive flux* must refer to a field-mediated interaction. The quantitative estimation of the variable physical quantity of that concept requires the introduction of the concept of *interaction flux*.

The expressions of the emissive interaction fluxes of X and Y, Φ_{Xe}^* and Φ_{Ye}^*, can be obtained on the basis of (131), (115) and (52), and, respectively, of (132), (116) and (53):

$$\Phi_{Xe}^* = \varphi_0 \, u_{Xe} \, R_Y^2 / 4 r^2 \quad (149) \quad \text{and} \quad \Phi_{Ye}^* = \varphi_0 \, u_{Ye} \, R_X^2 / 4 r^2 \quad (150).$$

The absorptive interaction fluxes of X and Y, Φ_{Xa}^* and Φ_{Ya}^*, can be defined:

$$\Phi_{Xa}^* = \varphi_{0X} \, u_{Xa} \quad (151) \quad \text{and} \quad \Phi_{Ya}^* = \varphi_{0Y} \, u_{Ya} \quad (152).$$

in which: φ_{0X} and φ_{0Y} — the absorptive interaction specific fluxes of X and Y, respectively,

$[N \, m^2 / U^2]$.

2.2.4.2) Hypothesis of the quantitative equality between the emissive and absorptive interaction fluxes

Defining the *absorptive interaction specific flux* as the flux absorbed by the field-source unit, and accepting:

$$\Phi_{Xa}^* = \Phi_{Ye}^* \quad (153) \quad \text{and} \quad \Phi_{Ya}^* = \Phi_{Xe}^* \quad (154).$$

the following expressions result for the absorptive interaction specific fluxes of X and Y:

$$\varphi_{0X} = \varphi_0 \, (u_{Ye} / u_{Xa}) \, (R_X^2 / 4 r^2) \quad (155) \quad \text{and} \quad \varphi_{0Y} = \varphi_0 \, (u_{Xe} / u_{Ya}) \, (R_Y^2 / 4 r^2) \quad (156).$$

2.2.4.3) Rapports of the emissive interaction fluxes

On the basis of (149), (115) and (52), and, respectively, of (150), (116) and (53):

$$\Phi_{Xe}^* = I_X \, S_{XI}^* \quad (157) \quad \text{and} \quad \Phi_{Ye}^* = I_Y \, S_{YI}^* \quad (158).$$

On the basis of (117), (157) and (137), and, respectively, of (118), (158) and (138):

$$F_X = \Phi_{Xe}^* / \Sigma_X^* \quad (159) \quad \text{and} \quad F_Y = \Phi_{Ye}^* / \Sigma_Y^* \quad (160).$$

On the basis of (94), (149), (150) and (121):

$$f = \Phi_{Xe}^* / \Phi_{Ye}^* \quad (161).$$

2.2.4.4) <u>Hypothetical rapports of the absorptive interaction fluxes</u>

On the basis of (156), (115) and (152), and, respectively, of (155), (116) and (151):

$$I_X = \varphi_{0Y}\, u_{Ya} / \pi\, R_Y^2 = \Phi_{Ya}^* / \pi\, R_Y^2 \quad (162),$$

$$I_Y = \varphi_{0X}\, u_{Xa} / \pi\, R_X^2 = \Phi_{Xa}^* / \pi\, R_X^2 \quad (163).$$

On the basis of (162), (117) and (137), and, respectively, of (163), (118) and (138):

$$F_X = \varphi_{0Y}\, u_{Ya}^2 / \pi\, R_Y^2 = \Phi_{Ya}^* / \Sigma_X^* \quad \text{and} \quad F_Y = \varphi_{0X}\, u_{Xa}^2 / \pi\, R_X^2 = \Phi_{Xa}^* / \Sigma_Y^* \quad (164).$$

On the basis of (94), (155), (156), (121), (151) and (152):

$$f = \varphi_{0Y}\, u_Y / \varphi_{0X}\, u_X = \Phi_{Ya}^* / \Phi_{Xa}^* \quad (165).$$

2.2.2.4. The electronic manuscript of the article of the fourth stage

Classical general static law of the fundamental physical forces and interactions

Abstract

The paper proposes a devising of a classical static general law of the fundamental physical forces and interactions, through an analysis of the pertinent laws of Coulomb and Newton, the combination of these laws with the theorem-law of Gauss, the creation of the interaction-specific concepts of “active flux of field” and “reaction pressure of particle”. This abstracting process implied the unraveling of the physical significations of the gravitational, the electric permittivity and the magnetic permeability constants by introducing the concept of “specific flux of field”, made it necessary and possible to generalize the concept of charge, the magnetic interaction as circular-field-mediated interaction and to introduce the more comprehensive concept of “source of field”, resulted in a more profound understanding of the mechanism of fundamental physical interactions and could further the current efforts for a quantum “unification”.

Subject Classification Number: PACS 11.27 +d

Devising of a quantum general theory of the fundamental physical interactions is one of the major problems of the present physics. Facts of this theoretical course are laws exhaustively verified experimentally. Accordingly, without the knowledge of the classical general static law of the fundamental forces and interactions any theoretical construction of that kind would be like creating quantum mechanics and quantum gravity without the knowledge of the electric law of Coulomb and, respectively the gravitational law of Newton.

The laws of the strong and the weak interactions are not known yet. The classical general static law of the fundamental forces and interactions can guide quests for their devising.

1) Classical general static law of the radial-field-mediated interactions

1.1) Analysis and comparison of the gravitational-force law of Newton and electric-force law of Coulomb

Be X and Y two spherical particles with uniform mass and charge distributions. The expressions of the gravitational and electric forces can be written on the basis of the laws of Newton and, respectively, Coulomb:

$$\mathbf{F_G = G\,(m_X\,m_Y / d^2)} \quad (1),$$

$$\mathbf{F_E = (1 / 4\,\pi\,\varepsilon_0)\,(q_X\,q_Y / d^2)} \quad (2),$$

in which: F_G — the gravitational force acting between X and Y, [N],

G — the gravitational constant of Newton, [$N\,m^2 / kg^2$],

m_X and m_Y — the masses of X and, respectively, Y, [kg],

d — the distance between the centers of X and Y, [m],

F_E — the electric force acting between X and Y, [N],

ε_0 — the electric permittivity of the vacuum, [$C^2 / N\,m^2$],

q_X and q_Y — the electric charges of X and, respectively, Y, [C].

It can be ascertained that:

1) the structure of the expression of each force law consists of a constant and a variable element;

2) the variable elements of the force laws are structurally identical, each having two sub-elements: one being the product of the variable physical quantities characterizing the particular field sources of X and Y, the other the d^2;

3) the constant elements differ from each other, namely the constant of Newton does not contain the product 4π and the electric permittivity constant in the denominator;

4) the constant structural elements may be interpreted physically for the gravitational and, respectively the electric forces acting between the two particles having unit masses and, respectively, electric charges and being at unit distances from each other;

5) the product $4\pi d^2$ being in the denominator of the formula of Coulomb suggests that the electric and the gravitational interactions are not linear, but of spherical surface character, and arising from this the electric and the gravitational forces can be described with the Gaussian concept of field flux;

6) the formulas of both Newton and Coulomb leave out of consideration that the interactions between masses and, respectively, electric charges are mediated by the gravitational and, respectively, the electric fields;

7) because of the difference of the constant elements, the non-determination of the physical sense of 4π, as well as the disregard of the role of fields, the laws of Newton and Coulomb in themselves cannot lead to the unification of the fundamental forces.

1.2) The insertion of the concept of field flux into the laws of Newton and Coulomb

On the basis of the law of Gauss it can be written:

$$\mathbf{\Phi_{XE} = \int_S \boldsymbol{E}_X \cdot \boldsymbol{ds} = 4\,\pi\,R_X^2\,E_{XR} = q_X / \varepsilon_0} \quad (3),$$

in which: Φ_{XE} — the flux of the electric field of X, [N m^2 / C],

$\boldsymbol{E}_X$ — the vector of intensity of the electric field of X, [N / C],

$\boldsymbol{ds}$ — the differential element of the Gauss surface surrounding X, [m^2],

R_X — the radius of X, [m],

E_{XR} — the intensity of the electric field of X on its surface, [N / C].

Extending the validity of the law of Gauss to mass:

$$\mathbf{\Phi_{XG} = \int_S \boldsymbol{g}_X \cdot \boldsymbol{ds} = 4\,\pi\,R_X^2\,g_{XR} = 4\,\pi\,G\,m_X} \quad (4),$$

in which: Φ_{XG} — the flux of the gravitational field of X, [N m^2 / kg],

$\boldsymbol{g}_X$ — the vector of intensity of the gravitational field of X, [N / kg],

g_{XR} — the intensity of the gravitational field of X on its surface, [N / kg].

It can be seen that the 4 π which figures in the law of Coulomb disappears from the law of Gauss, as well as the 4 π which does not figure in the gravitational law of Newton appears in the law of Gauss extended to mass. These facts suggest that there is a complementary relation between, on the one hand, the law of Gauss and, on the other hand, the laws of Newton and Coulomb. This can also be seen from that while the law of Gauss deals with fields of particles, the laws of Newton and Coulomb refer to the forces appearing between masses and, respectively, electric charges. Therefore, neither the law of Gauss, nor the laws of Newton and Coulomb wholly describe the gravitational and, respectively, the electric interactions. These ascertainments throw light upon the necessity of inserting the law of Gauss into the laws of Newton and Coulomb.

On the basis of (1) – (4) it can be written:

$$\mathbf{F_G = F_{XYG} = \Phi_{XG}\,(m_Y / 4\,\pi\,d^2) = F_{YXG} = \Phi_{YG}\,(m_X / 4\,\pi\,d^2)} \quad (5),$$

$$\mathbf{F_E = F_{XYE} = \Phi_{XE}\,(q_Y / 4\,\pi\,d^2) = F_{YXE} = \Phi_{YE}\,(q_X / 4\,\pi\,d^2)} \quad (6),$$

in which: F_{XYG} and F_{XYE} — the gravitational and, respectively, the electric forces with which X acts on Y, [N],

F_{YXG} and F_{YXE} — the gravitational and, respectively, the electric forces with which Y acts on X, [N].

It can be ascertained that:

1) the insertion of the concept of field flux into the laws of Newton and Coulomb results in two structurally identical force formulas each, according to that the insertion of the fluxes of the fields of X or Y happens, by this means pointing out that the gravitational and, respectively, the electric forces constitute parts of interactions;

2) the two force formulas of the gravitational and electric interactions each are quantitatively identical and qualitatively different;

3) the insertion of the fluxes of the fields of X into the laws of Newton and Coulomb results in the formulas of the gravitational and, respectively, electric forces with which X acts on Y, and reversely;

4) each of the combined formulas (5) and (6) contains two elements, one of which refers to the field of a particle, the other to the mass and, respectively, the electric charge of the other;

5) the combined laws of Gauss, on the one hand, and Newton and Coulomb, on the other hand, stress that the gravitational and, respectively, the electric interactions are mediated by fields, namely X acts on Y with the fluxes of its fields on the mass and, respectively, the electric charge of Y, and reversely;

6) the insertion of the law of Gauss extended to mass into the gravitational law of Newton brings to light the 4π which has already appeared in the law of Coulomb;

7) the combination of the laws of Gauss and, respectively, Newton and Coulomb gathers the 4π into the same factor with d^2, by this means stressing the spherical-surface character of the gravitational and, respectively, the electric interactions;

8) the combination of the laws of Newton and Coulomb with the law of Gauss makes it unnecessary the third law of Newton in the cases of the gravitational and, respectively, the electric interactions;

9) while the laws of Newton and Coulomb are force laws, the combination of those with the law of Gauss results in the laws of the gravitational and, respectively, the electric interactions;

10) the Gauss-Newton and Gauss-Coulomb laws disregard the evident fact that X and Y do not act on each other with the entire fluxes of their fields.

1.3) The concepts of active flux and specific flux of the gravitational and the electric fields

It can be written that:

$$\mathbf{\Phi_{XG}^* = \Phi_{XG}\,(S_Y' / St_Y)} \quad (7) \quad \text{and} \quad \mathbf{\Phi_{YG}^* = \Phi_{YG}\,(S_X' / St_X)} \quad (8),$$

$$\mathbf{\Phi_{XE}^* = \Phi_{XE}\,(S_Y' / St_Y)} \quad (9) \quad \text{and} \quad \mathbf{\Phi_{YE}^* = \Phi_{YE}\,(S_X' / St_X)} \quad (10),$$

in which: Φ_{XG}^* and Φ_{YG}^* — the active fluxes of the gravitational fields of X and, respectively, Y, [N m^2 / kg],

Φ_{XE}^* and Φ_{YE}^* — the active fluxes of the electric fields of X and, respectively, Y, [N m^2 / C],

S_Y' and S_X' — the active-flux surfaces of Y and, respectively, X, [m^2],

St_Y and St_X — the surfaces of the spheres with the radii t_Y and, respectively, t_X, [m^2].

$$\mathbf{S_Y' = 2\,\pi\,t_Y\,h_Y} \quad (11) \quad \text{and} \quad \mathbf{S_X' = 2\,\pi\,t_X\,h_X} \quad (12),$$

in which: t_Y —the tangent drawn from the center of X onto the surface of Y, [m],

t_X —the tangent drawn from the center of Y onto the surface of X, [m],

h_Y and h_X — the heights of the spherical caps S_Y' and, respectively, S_X', [m].

$$\mathbf{St_Y = 4\,\pi\,t_Y^2} \quad (13) \quad \text{and} \quad \mathbf{St_X = 4\,\pi\,t_X^2} \quad (14),$$

$$\mathbf{h_Y = t_Y\,(1 - \cos\alpha)} \quad (15) \quad \text{and} \quad \mathbf{h_X = t_X\,(1 - \cos\beta)} \quad (16),$$

in which: α — the angle between the straight line binding the centers of X and Y, and t_Y.

β — the angle between the straight line binding the centers of X and Y, and t_X.

On the basis of (7) – (16):

$$\mathbf{\Phi_{XG}^* = \Phi_{XG}\,(1 - \cos\alpha) / 2} \quad (17) \quad \text{and} \quad \mathbf{\Phi_{YG}^* = \Phi_{YG}\,(1 - \cos\beta) / 2} \quad (18),$$

$$\mathbf{\Phi_{XE}^* = \Phi_{XE}\,(1 - \cos\alpha) / 2} \quad (19) \quad \text{and} \quad \mathbf{\Phi_{YE}^* = \Phi_{YE}\,(1 - \cos\beta) / 2} \quad (20).$$

On the basis of (4) and (3) the specific flux of the gravitational and, respectively, the electric fields can be established:

$$\mathbf{\varphi_G = \Phi_{XG} / m_X = 4\,\pi\,G} \quad (21) \quad \text{and} \quad \mathbf{\varphi_E = \Phi_{XE} / q_X = 1 / \varepsilon_0} \quad (22),$$

in which: φ_G — the specific flux of the gravitational field, [N m^2 / kg^2],

φ_E — the specific flux of the electric field, [N m^2 / C^2].

It can be seen that the physical senses of G and ε_0 are not nearer to the concept of gravitational and, respectively, electric force, as this resulted from the laws of Newton and Coulomb, but to the concept of specific flux of the gravitational and, respectively, the electric fields.

On the basis of (17) – (20), (4) and (3), as well as (21) and (22):

$$\mathbf{\Phi_{XG}^* = \varphi_G\,m_X\,(1 - \cos\alpha) / 2} \quad (23) \quad \text{and} \quad \mathbf{\Phi_{YG}^* = \varphi_G\,m_Y\,(1 - \cos\beta) / 2} \quad (24),$$

$$\mathbf{\Phi_{XE}^* = \varphi_E\,q_X\,(1 - \cos\alpha) / 2} \quad (25) \quad \text{and} \quad \mathbf{\Phi_{YE}^* = \varphi_E\,q_Y\,(1 - \cos\beta) / 2} \quad (26).$$

1.4) <u>The establishment of the laws of gravitational and electric interactions. The concept of reaction pressure</u>

Also taking into account the combined laws (5) and (6) of the gravitational and, respectively, the electric interactions, at the establishment of the laws of the gravitational and the electric interactions including the concept of active flux as well, one can start from the hypothesis that beside the concept of active flux these laws should contain one more interaction factor interpretable physically. On the basis

of this it can be written:

$$\mathbf{F_{XYG} = \Phi_{XG}^{*}\, \chi_{YG}} \quad (27) \quad \text{and} \quad \mathbf{F_{YXG} = \Phi_{YG}^{*}\, \chi_{XG}} \quad (28),$$

$$\mathbf{F_{XYE} = \Phi_{XE}^{*}\, \chi_{YE}} \quad (29) \quad \text{and} \quad \mathbf{F_{YXE} = \Phi_{YE}^{*}\, \chi_{XE}} \quad (30),$$

in which: χ_{YG} and χ_{XG} — the gravitational interaction factors of Y and, respectively, X, [kg / m^2],

χ_{YE} and χ_{XE} — the electric interaction factors of Y and, respectively, X, [C / m^2].

On the basis of (5), (27) and (28), as well as (6), (29) and (30):

$$\mathbf{\chi_{XG} / \chi_{YG} = \Phi_{XG}^{*} / \Phi_{YG}^{*}} \quad (31) \quad \text{and} \quad \mathbf{\chi_{XE} / \chi_{YE} = \Phi_{XE}^{*} / \Phi_{YE}^{*}} \quad (32).$$

On the basis of (31), (7), (8) and (4), as well as (32), (9), (10) and (3):

$$\mathbf{\chi_{XG} / \chi_{YG} = (m_X / m_Y)\, (S_Y' / S_X')\, (\, St_X / St_Y)} \quad (33),$$

$$\mathbf{\chi_{XE} / \chi_{YE} = (q_X / q_Y)\, (S_Y' / S_X')\, (\, St_X / St_Y)} \quad (34).$$

Since:

$$\mathbf{t_X = d \cos\beta} \quad (35) \quad \text{and} \quad \mathbf{t_Y = d \cos\alpha} \quad (36),$$

on the basis of (33) and (34), (14) and (13), as well as (35) and (36):

$$\mathbf{\chi_{XG} / \chi_{YG} = (m_X / m_Y)\, (S_Y' / S_X')\, (\cos^2\beta / \cos^2\alpha)} \quad (37),$$

$$\mathbf{\chi_{XE} / \chi_{YE} = (q_X / q_Y)\, (S_Y' / S_X')\, (\cos^2\beta / \cos^2\alpha)} \quad (38).$$

On the basis of (37) and (38):

$$\mathbf{\chi_{XG} = (m_X / S_X')\cos^2\beta} \quad (39) \quad \text{and} \quad \mathbf{\chi_{YG} = (m_Y / S_Y')\cos^2\alpha} \quad (40),$$

$$\mathbf{\chi_{XE} = (q_X / S_X')\cos^2\beta} \quad (41) \quad \text{and} \quad \mathbf{\chi_{YE} = (q_Y / S_Y')\cos^2\alpha} \quad (42).$$

But the active-flux surfaces are imaginary, they have no physical sense. For this reason they must be substituted for the surfaces through which the particles do react.

$$\mathbf{S_X^{*} = 2\,\pi\, R_X^{2}} \quad (43) \quad \text{and} \quad \mathbf{S_Y^{*} = 2\,\pi\, R_Y^{2}} \quad (44),$$

in which: S_X^* and S_Y^* — the reaction surfaces of X and, respectively, Y, [m^2].

$$\mathbf{h_X = t_X\,(1 - \cos\beta)} \quad (45) \quad \text{and} \quad \mathbf{h_Y = t_Y\,(1 - \cos\alpha)} \quad (46),$$

$$\mathbf{tg\beta = \sin\beta / \cos\beta = R_X / t_X} \quad (47) \quad \text{and} \quad \mathbf{tg\alpha = \sin\alpha / \cos\alpha = R_Y / t_Y} \quad (48),$$

$$\mathbf{\sin^2\alpha = 1 - \cos^2\alpha = (1 + \cos\alpha)\,(1 - \cos\alpha)} \quad (49).$$

On the basis of (45) – (49) the formulas (39) – (42) change as follows;:

$$\mathbf{\chi_{XG} = (m_X / S_X^*)\,(1 + \cos\beta) = \Pi_{XG}} \quad (50) \quad \mathbf{\chi_{YG} = (m_Y / S_Y^*)\,(1 + \cos\alpha) = \Pi_{YG}} \quad (51),$$

$$\mathbf{\chi_{XE} = (q_X / S_X^*)\,(1 + \cos\beta) = \Pi_{XE}} \quad (52) \quad \mathbf{\chi_{YE} = (q_Y / S_Y^*)\,(1 + \cos\alpha) = \Pi_{YE}} \quad (53),$$

in which: Π_{XG} and Π_{YG} — the gravitational reaction pressures of X and, respectively, Y, [kg / m^2],

Π_{XE} and Π_{YE} — the electric reaction pressures of X and, respectively, Y, [C / m^2].

On the basis of (27)-(30), (50)-(53), as well as (5) and (6) the gravitational and the electric interaction laws can be written as follows:

$$\mathbf{F_{XYG} = \Phi_{XG}^*\,\Pi_{YG} = F_{YXG} = \Phi_{YG}^*\,\Pi_{XG}} \quad (54),$$

$$\mathbf{F_{XYE} = \Phi_{XE}^*\,\Pi_{YE} = F_{YXE} = \Phi_{YE}^*\,\Pi_{XE}} \quad (55).$$

Unlike the gravitational- and the electric-force laws (1) and (2), the force formulas of these interaction laws contain only two, but complex and comprehensive interaction-specific variable physical quantities each, which make it evident that the particles act with their active fluxes and react with their reaction pressures on each other, by this means uncovering the mechanism of the gravitational and the electric interactions.

1.5) <u>The corroboration of the laws of gravitational and electric interactions</u>

It can be written that:

$$\mathbf{\sin\alpha = R_Y / d} \quad (56) \quad \text{and} \quad \mathbf{\sin\beta = R_X / d} \quad (57),$$

On the basis of (23)-(26), (50)-(53), (21) and (22), (43) and (44), as well as (56) and (57), the

formulas (54) and (55) can be traced back to the laws of Newton and, respectively, Coulomb. It can be seen that the laws of Newton and Coulomb can be considered the most simplified forms of the laws (54) and (55) of the gravitational and, respectively, the electric interactions.

1.6) The generalization of the laws of gravitational and electric interactions

It can be seen from the formulas (23)-(26) of the active flux and the formulas (50)-(53) of the reaction pressure that in the gravitational interaction mass has the same role as the electric charge in the electric interaction. On the basis of this, mass can be considered as being gravitational charge. Further, the fact of mediation of the gravitational and the electric fundamental interactions by radial fields can be extended for a hypothesis to the strong, the weak and other possible fundamental interactions. At the same time, the sources of the strong and the weak radial fields can be termed “strong” and, respectively, “weak charges”. On the basis of these the general law of the radial-field-mediated interactions can be written as follows:

$$\mathbf{F_R = F_{XYR} = \Phi_{XR}^* \Pi_{YR} = F_{YXR} = \Phi_{YR}^* \Pi_{XR}} \quad (58),$$

in which: F_R — the radial force acting between X and Y, [N],

F_{XYR} — the radial force with which X acts on Y, [N],

F_{YXR} — the radial force with which Y acts on X, [N],

Φ_{XR}^* and Φ_{YR}^* — the active fluxes of the radial fields of X and, respectively, Y,[N m^2 / U],

Π_{YR} and Π_{XR} — the radial reaction pressures of Y and, respectively, X,[U / m^2].

1.7) Consequences

1.7.1) The concept of specific flux of the radial field. By the generalization of the formulas (21) and (22) it can be written:

$$\varphi_R = \Phi_{XR} / q_{XR} \quad (59),$$

in which: q_{XR} — the charge of the radial-field source X, [U],

Φ_{XR} — the flux of the radial field of X, [N m^2 / U],

φ_R — the specific flux of the radial field, [N m^2 / U^2],

1.7.2) **The concept of active flux of the radial field.** The active fluxes characterizing the interactions mediated by radial fields can be described with the following formulas:

$$\Phi_{XR}^* = \varphi_R\, q_{XR}\, (1 - \cos\alpha) / 2 \quad (60) \quad \text{and} \quad \Phi_{YR}^* = \varphi_R\, q_{YR}\, (1 - \cos\beta) / 2 \quad (61).$$

1.7.3) **The concept of radial reaction pressure.** The general form of the formulas (50)-(53) is as follows:

$$\Pi_{XR} = (q_{XR} / S_X^*)\, (1 + \cos\beta) \quad (62) \quad \text{and} \quad \Pi_{YR} = (q_{YR} / S_Y^*)\, (1 + \cos\alpha) \quad (63).$$

1.7.4) **The concept of radial force.** On the basis of (58), (60) and (61), (62) and (64), (43) and (44), as well as (56) and (57) it can be written:

$$F_R = F_{XYR} = F_{YXR} = \varphi_R\, q_{XR}\, q_{YR} / 4\,\pi\, d^2 \quad (64).$$

Similarly to the radial interactions it is remarkable the complete structural identity between radial forces, in general, and the gravitational and the electric forces, in particular, of which formulas can be written:

$$F_G = F_{XYG} = F_{YXG} = \varphi_G\, q_{XG}\, q_{YG} / 4\,\pi\, d^2 \quad (65),$$

$$F_E = F_{XYE} = F_{YXE} = \varphi_E\, q_{XE}\, q_{YE} / 4\,\pi\, d^2 \quad (66),$$

in which: q_{XG} and q_{YG} — the gravitational charges of X and, respectively, Y, [kg],

q_{XE} and q_{YE} — the electric charges of X and, respectively, Y, [C].

2) Classical general static law of the circular-field-mediated inter-actions

2.1) The concept of active flux of the magnetic field

Be X and Y in motion in a common system of co-ordinates, at the velocities considerably smaller than the velocity of light. Unlike the radial fields, in the case of the magnetic field the active

flux can only be calculated by integrating with the aid of the law of Gauss (3) extended to magnetostatics over the active flux surface, which is the base of the hemisphere of particle to which the magnetic-field vectors are perpendicular. Supposing that from the magnetic-physical point of view spherical particles behave like points, it can be written:

$$\mathbf{\Phi_{XM}^* = \int_S B_X \cdot ds = B_X S_{YM}'} \quad (67) \quad \text{and} \quad \mathbf{\Phi_{YM}^* = \int_S B_Y \cdot ds = B_Y S_{XM}'} \quad (68),$$

in which: Φ_{XM}^* and Φ_{YM}^* — the active fluxes of the magnetic fields of X and, respectively, Y, [T m^2],

$\boldsymbol{B}_X$ — the vector of intensity of the magnetic field of X in the center of Y, [T],

$\boldsymbol{B}_Y$ — the vector of intensity of the magnetic field of Y in the center of X, [T],

B_X — the intensity of the magnetic field of X in the center of Y, [T],

B_Y — the intensity of the magnetic field of Y in the center of X, [T],

S_{YM}' and S_{XM}' — the magnetic active-flux surfaces of Y and, respectively, X, [m^2].

On the basis of the Biot-Savart law:

$$\mathbf{B_X = \mu_0 q_X |v_X \times i_d| / 4 \pi d^2 = \mu_0 q_X v_X \sin\theta / 4 \pi d^2} \quad (69),$$

$$\mathbf{B_Y = \mu_0 q_Y |v_Y \times j_d| / 4 \pi d^2 = \mu_0 q_Y v_Y \sin\eta / 4 \pi d^2} \quad (70),$$

in which: μ_0 — the magnetic permeability of vacuum, [Wb / A m],

$\boldsymbol{v}_X$ and $\boldsymbol{v}_Y$ — the vectors of velocities of X and, respectively, Y, [m / s],

v_X and v_Y — the velocities of X and, respectively, Y, [m / s],

$\boldsymbol{i}_d$ and $\boldsymbol{j}_d$ — the unit vectors of the vector $\boldsymbol{d}$ towards the center of Y and, respectively, X,

θ — the angle between $\boldsymbol{v}_X$ and $\boldsymbol{d}$,

η — the angle between $\boldsymbol{v}_Y$ and $\boldsymbol{d}$.

$$\mathbf{S_{YM}' = \pi R_Y^2} \quad (71) \quad \text{and} \quad \mathbf{S_{XM}' = \pi R_X^2} \quad (72).$$

On the basis of (67)-(72), as well as (56) and (57):

$$\mathbf{\Phi_{XM}^* = \mu_0\, q_X\, |v_X \times i_d|\, \sin^2\alpha / 4 = \mu_0\, q_X\, v_X\, \sin\theta\, \sin^2\alpha / 4} \quad (73),$$

$$\mathbf{\Phi_{YM}^* = \mu_0\, q_Y\, |v_Y \times j_d|\, \sin^2\beta / 4 = \mu_0\, q_Y\, v_Y\, \sin\eta\, \sin^2\beta / 4} \quad (74),$$

2.2) Law of magnetic interaction and the concept of magnetic reaction pressure

Generally, the third law of Newton does not apply to magnetic force, the reason why in order to deduce the formulas of the magnetic reaction pressure, the Laplace-Lorentz law must be used.

$$\mathbf{F_{XYM} = q_Y\, |v_Y \times B_X| = q_Y\, v_Y\, B_X\, \sin\iota} \quad (75), \qquad \mathbf{F_{YXM} = q_X\, |v_X \times B_Y| = q_X\, v_X\, B_Y\, \sin\zeta} \quad (76),$$

in which: F_{XYM} — the magnetic force with which X acts on Y, [N],

F_{YXM} — the magnetic force with which Y acts on X, [N],

ι — the angle between $\boldsymbol{v}_Y$ and $\boldsymbol{B}_X$,

ζ — the angle between $\boldsymbol{v}_X$ and $\boldsymbol{B}_Y$.

Extending the radial-interaction law (58) to magnetostatics:

$$\mathbf{F_{XYM} = \Phi_{XM}^*\, \Pi_{YM}} \quad (77) \quad \text{and} \quad \mathbf{F_{YXM} = \Phi_{YM}^*\, \Pi_{XM}} \quad (78),$$

in which: Π_{YM} and Π_{XM} — the magnetic reaction pressures of Y and, respectively, X, [N / T m^2].

On the basis of (77) and (78), (75) and (76), as well as (67) and (68):

$$\mathbf{\Pi_{YM} = q_Y\, |v_Y \times j_B| / S_{YM}' = (q_Y\, v_Y / S_{YM}')\, \sin\iota} \quad (79),$$

$$\mathbf{\Pi_{XM} = q_X\, |v_X \times i_B| / S_{XM}' = (q_X\, v_X / S_{XM}')\, \sin\zeta} \quad (80),$$

in which: $\boldsymbol{j}_B$ — the unit vector of $\boldsymbol{B}_X$,

$\boldsymbol{i}_B$ — the unit vector of the vector $\boldsymbol{B}_Y$.

The reaction surface is the hemisphere of the particle whose direction coincides with the direction of the magnetic force acting on that particle.

$$\mathbf{S_Y^* = 2\, S_{YM}'} \quad (81) \quad \text{and} \quad \mathbf{S_X^* = 2\, S_{XM}'} \quad (82)$$

On the basis of (79)-(82):

$$\mathbf{\Pi_{YM} = 2\, q_Y\, |v_Y \times j_B| / S_Y^* = (q_Y\, v_Y / S_Y^*)\, 2 \sin\iota} \quad (83),$$

$$\mathbf{\Pi_{XM} = 2\, q_X\, |v_X \times i_B| / S_X^* = (q_X\, v_X / S_X^*)\, 2 \sin\zeta} \quad (84).$$

2.3) Generalization of the law of magnetic interaction

If the radial field is somewhat general, it is not to be expected that the magnetic field can only be generated by the electric charge. The electric magnetic field can be considered and termed “electric circular” field. It can be assumed that there is a gravitational magnetic field, that could be termed “gravitational circular”, and so on. Consequently, the formulas (77) and (78) can be turned into the general static law of the circular interactions:

$$\mathbf{F_{XYC} = \Phi_{XC}^*\, \Pi_{YC}} \quad (85) \quad \text{and} \quad \mathbf{F_{YXC} = \Phi_{YC}^*\, \Pi_{XC}} \quad (86),$$

in which: F_{XYC} — the circular force with which X acts on Y, [N],

F_{YXC} — the circular force with which Y acts on X, [N],

Φ_{XC}^* and Φ_{YC}^* — the active fluxes of the circular fields of X and, respectively, Y, [$U_1\, m^2$],

Π_{YC} and Π_{XC} — the circular reaction pressures of Y and, respectively, X, [U_2 / m^2].

2.4) Consequences

2.4.1) The concept of source of field. The electric charge cannot in itself originate the magnetic field. The electric circular field has a more complex source, its existence depends on two variable physical quantities, whose product play the same role in the magnetic laws as mass and the electric charge in the gravitational and, respectively, the electric laws. This “magnetic charge” can be termed “source of the electric circular field”.

$$\mathbf{f_{XEC} = q_{XE}\, v_X} \quad (87) \quad \text{and} \quad \mathbf{f_{YEC} = q_{YE}\, v_Y} \quad (88),$$

in which: f_{XEC} and f_{YEC} — the sources of the electric circular fields of X and, respectively, Y, [C m / s],

On the basis of (87) and (88) the formulas (73) and (74), as well as (83) and (84) become:

$$\mathbf{\Phi_{XEC}^* = \mu_0 |f_{XEC} \times i_d| \sin^2\alpha / 4 = \mu_0 f_{XEC} \sin\theta \sin^2\alpha / 4} \quad (89),$$

$$\mathbf{\Phi_{YEC}^* = \mu_0 |f_{YEC} \times j_d| \sin^2\beta / 4 = \mu_0 f_{YEC} \sin\eta \sin^2\beta / 4} \quad (90),$$

in which: $\boldsymbol{f}_{XEC}$ and $\boldsymbol{f}_{YEC}$ — the vectors of sources of the electric circular fields of X and, respectively, Y, [C m / s],

Φ_{XEC}^* and Φ_{YEC}^* — the active fluxes of the electric circular fields of X and, respectively, Y, [T m^2],

$$\mathbf{\Pi_{YEC} = 2 |f_{YEC} \times j_B| / S_Y^* = (f_{YEC} / S_Y^*) 2 \sin\iota} \quad (91),$$

$$\mathbf{\Pi_{XEC} = 2 |f_{XEC} \times i_B| / S_X^* = (f_{XEC} / S_X^*) 2 \sin\zeta} \quad (92),$$

in which: Π_{YEC} and Π_{XEC} — the electric circular reaction pressures of Y and, respectively, X, [N / T m^2].

2.4.2) **<u>The concept of specific flux of the electric circular field.</u>** On the basis of (22) the dimensional formula of the specific flux of the electric field can be written:

$$\mathbf{[\varphi_E] = N\, m^2 / C^2 = (N / C)\, m^2 / C = [\Phi_{XE} / q_{XE}]} \quad (93).$$

Further, on the basis of (69), (67) and (87) the dimensional formula of the magnetic permeability of vacuum can be obtained:

$$\mathbf{[\mu_0] = Wb / A\, m = T\, m^2 / C\, (m / s) = [B_X \cdot ds / q_X\, v_X] = [\Phi_{XEC} / f_{XEC}]} \quad (94).$$

On the basis of (93) and (94) the magnetic permeability of vacuum can be considered and termed “specific flux of the magnetic”, namely “electric circular field”. On the basis of the formulas

(73) and (74) the specific flux of the electric circular field can be described, for example, as the active flux of the electric circular field of X, if fulfilling the condition;

$$\mathbf{q_X\, v_X \sin\theta \sin^2\alpha = 4} \qquad (95)$$

2.4.3) <u>The concept of active flux of the circular field.</u> Taking into account the concept of specific flux of the electric circular field, the formulas (73) and (74) can be generalized as follows:

$$\mathbf{\Phi_{XC}^* = \varphi_C\, |f_{XC} \times i_d|\, \sin^2\alpha / 4 = \varphi_C\, f_{XC}\, \sin\theta\, \sin^2\alpha / 4} \qquad (96),$$

$$\mathbf{\Phi_{YC}^* = \varphi_C\, |f_{YC} \times j_d|\, \sin^2\beta / 4 = \varphi_C\, f_{YC}\, \sin\eta\, \sin^2\beta / 4} \qquad (97),$$

in which: φ_C — the specific flux of the circular field, $[U_1\, m^2 / U_2]$,

f_{XC} and f_{YC} — the sources of the circular fields of X and, respectively, Y, $[U_2]$.

It is remarkable the structural identity of these formulas with those of the active fluxes of radial fields (60) and (61), each one having three major elements: one referring to the field, one to its source and one to their spatiality.

2.4.4) <u>The concept of circular reaction pressure.</u> The formulas (91) and (92) can be generalized as follows:

$$\mathbf{\Pi_{YC} = 2\, |f_{YC} \times j_B| / S_Y^* = (f_{YC} / S_Y^*)\, 2\, \sin\iota} \qquad (98),$$

$$\mathbf{\Pi_{XC} = 2\, |f_{XC} \times i_B| / S_X^* = (f_{XC} / S_X^*)\, 2\, \sin\zeta} \qquad (99),$$

Also, there is a structural identity between the above expressions of the circular reaction pressure and the ones of the radial reaction pressure (62) and (63).

4) <u>Classical general static law of the field-mediated interactions</u>

It can be ascertained the structural identity of the formulas (60) and (61) of the active fluxes of the radial fields with the formulas (96) and (97) of the active fluxes of the circular fields of particles, each one containing three major elements: one referring to the field, one to its source and one to their

spatiality. At the same time, each of the formulas (62) and (63) of the radial reaction pressures, as well as the formulas (98) and (99) of the circular reaction pressures of particles has one element regarding the source of field, one the reaction surface and one the spatiality of reaction. Consequently, the law (58) of the radial interactions and the laws (85) and (86) of the circular interactions can be generalized as follows:

$$\mathbf{F_{XY} = \Phi_X^* \Pi_Y} \quad (100) \quad \text{and} \quad \mathbf{F_{YX} = \Phi_Y^* \Pi_X} \quad (101),$$

$$\mathbf{\Phi_X^* = \varphi f_X \sigma_{\Phi X}} \quad (102) \quad \text{and} \quad \mathbf{\Phi_Y^* = \varphi f_Y \sigma_{\Phi Y}} \quad (103),$$

$$\mathbf{\Pi_Y = (f_Y / S_Y^*) \sigma_{\Pi Y}} \quad (104) \quad \text{and} \quad \mathbf{\Pi_X = (f_X / S_X^*) \sigma_{\Pi X}} \quad (105),$$

in which: F_{XY} — the field-mediated force with which X acts on Y, [N],

F_{YX} — the field-mediated force with which Y acts on X, [N],

Φ_X^* and Φ_Y^* — the active fluxes of the fields of X and, respectively, Y, [Q_1 m^2],

Π_Y and Π_X — the reaction pressures of Y and, respectively, X, [Q_2 / m^2],

φ — the specific flux of field, [Q_1 m^2 / Q_2],

f_X and f_Y — the sources of the fields of X and, respectively, Y, [Q_2],

$\sigma_{\Phi X}$ and $\sigma_{\Phi Y}$ — the spatiality factors of active fluxes of the fields of X and, respectively, Y,

$\sigma_{\Pi Y}$ and $\sigma_{\Pi X}$ — the spatiality factors of the reaction pressures of Y and, respectively, X.

A consequence of this generalization is the necessity and opportunity of introducing a new, more precise terminology. In this way, for example, the formula (65) can be written:

$$\mathbf{F_{GR} = \varphi_{GR} f_{XGR} f_{YGR} / 4 \pi d^2} \quad (106),$$

$$\mathbf{f_{XGR} = q_{XG} = m_X} \quad (107) \quad \text{and} \quad \mathbf{f_{YGR} = q_{YG} = m_Y} \quad (108).$$

in which: F_{GR} — the gravitational radial force acting between X and Y, [N],

φ_{GR} — the specific flux of the gravitational radial field, [N m^2 / kg^2],

f_{XGR} and f_{YGR} — the sources of the gravitational radial fields of X and, respectively, Y, [kg].

2.2.3. General theory of the physical motion

CLASSICAL INDUCTIVE GENERAL LAW OF MOTION

1) The induction of the classical inductive general law of motion

1.1) The effect of Newton's second law

Be X a particle with the mass m_X, the velocity v_X, considerably smaller than the velocity of the light. The expression of the force F exerted on it is given by the second law of Newton:

$$F = m_X a_X = m_X dv_X / dt = dp_X / dt \quad (1),$$

in which: a_X — the acceleration of X brought about by F, [m / s^2],

p_X — the impulse of X, [kg m / s].

It can be ascertained that:

a) the second law of Newton is applicable to the motion brought about by the gravitational force as well, on the basis of the following expression:

$$a_X = g \quad (2),$$

in which: g — the intensity of the gravitational field acting on X, [m / s^2];

b) the second law of Newton is applicable to the motions brought about by the electric and other field-mediated forces only in so far as they accelerate masses;

c) the second law of Newton is not applicable to the motions of the electric and other types of charges.

Consequently, the second law of Newton can only be considered the law of the motion of masses. A more general law of motion must include the motions of the electric and other types of charges as well.

1.2) The electrostatic field as a rectilinear acceleration field

In the acceleration of the electric charges brought about by the electric field, the masses play no essential role. Nevertheless, the unit of measure of the electric force is the Newton, comprising the unit of measure of the mass as well, and the unit of measure of the intensity of the electric field is the

Newton / Coulomb. Therefore, in this theoretical course, it is reasonable a re-interpretation of the unit of measure of the force bringing about the acceleration of the electric charges:

$$([F_F] = [C\ m / s^2] = [Franklin] = [Fn]) \Rightarrow ([E_F] = [Fn / C] = [m / s^2]) \quad (3),$$

in which: F_F — the Franklin force, [C m / s^2],

E_F — the acceleration intensity of the electric field, [m / s^2].

The Franklin force may be defined as a force bringing about the acceleration of an electric charge and is quantitatively expressed in Franklin.

It can be seen from (3) that by means of making natural the unit of measure of the force bringing about the acceleration of the electric charges, the unit of measure of the intensity of the electric field becomes the same with the unit of measure of the intensity of the gravitational field. As the gravitational field is the rectilinear acceleration field of the masses, in that manner the electrostatic field can be considered to be the rectilinear acceleration field of the electric charges.

1.3) <u>Electric impulse and law of the rectilinear motion of the electric charges</u>

If X disposes of an electric charge q_X and is surrounded by an electrostatic field of external origin, the expression of the electric Franklin force exerted on it;

$$F_F = q_X E_F \quad (4),$$

in which: q_X — the electric charge of X, [C].

On the basis of a vectorial analysis of the behavior of the electric charges in electrostatic field, the following vectorial expressions can be established:

$$(q_X > 0) \Rightarrow (\mathbf{E_{FR}} = \mathbf{a_{ER}} = \mathbf{a_{XER}}) \quad (5),$$

$$(q_X < 0) \Rightarrow (\mathbf{E_{FR}} = \mathbf{a_{ER}} = -\mathbf{a_{XER}}) \quad (6),$$

in which: $\mathbf{a_{ER}}$ — the vector of the intensity of the electrostatic field

as electric rectilinear acceleration field, [m / s^2],

$\mathbf{a_{XER}}$ — the vector of the electric rectilinear acceleration of X, [m / s^2].

The impulse of the electric charge of X can be defined similarly to the impulse of the mass:

$$p_{XE} = q_X v_X \quad (7),$$

in which: p_{XE} — the electric impulse of X, [C m / s].

On the basis of a vectorial analysis of the rectilinear motion of the electric charges, as well as of (4) – (7):

$$(q_X > 0) \Rightarrow (F_{FR} = q_X a_{XER} = q_X dv_{XR} / dt = dp_{XER} / dt) \quad (8),$$

$$(q_X < 0) \Rightarrow (F_{FR} = - q_X a_{XER} = - q_X dv_{XR} / dt = - dp_{XER} / dt) \quad (9),$$

in which: F_{FR} — the rectilinear Franklin force exerted on X, [Fn],

dv_{XR} — the rectilinear variation of the velocity of X, [m / s],

dp_{XER} — the rectilinear variation of the electric impulse of X, [C m / s].

1.4) <u>The magnetic field as centripetal acceleration field</u>

On the basis of (3), the units of measure of the magnetic permeability of the vacuum, as well as of the intensity of the induction of the magnetic field:

$$([F_F] = [Fn]) \Rightarrow ([\mu_{0F}] = [Fn / A^2] = [m / C]) \Rightarrow ([B_F] = [s^{-1}]) \quad (10).$$

If X is surrounded by a uniform magnetic field, the vectorial expression of the magnetic Franklin force exerted on it is given by the law of Lorentz:

$$F_F = q_X \mathbf{v_X} \times \mathbf{B_F} \quad (11).$$

On the basis of (10) and (11), the vectorial product $\mathbf{v_X} \times \mathbf{B_F}$ can physically be interpreted for a centripetal acceleration and $\mathbf{B_F}$ for an angular velocity. As such, $\mathbf{B_F}$ brings about the centripetal acceleration of the electric charges.

1.5) <u>Law of the uniform circular motion of the electric charges</u>

On the basis of a vectorial analysis of the behavior of the electric charges in magnetic field, as well as of (11), the following vectorial relations can be established:

$$(q_X > 0) \Rightarrow (\mathbf{v_X} \times \mathbf{B_F} = \mathbf{v_X} \times \boldsymbol{\omega_B} = \mathbf{a_{EC}} = \boldsymbol{\omega_X} \times \mathbf{v_X} = \mathbf{a_{XEC}} \quad (12),$$

$$(q_X < 0) \Rightarrow (\mathbf{v_X} \times \mathbf{B_F} = \mathbf{v_X} \times \boldsymbol{\omega_B} = \mathbf{a_{EC}} = -\boldsymbol{\omega_X} \times \mathbf{v_X} = -\mathbf{a_{XEC}} \quad (13),$$

in which: $\boldsymbol{\omega_B}$ — the vector of the angular velocity of the magnetic induction, [rad / s],

$\mathbf{a_{EC}}$ — the vector of the intensity of the magnetic field
as electric centripetal acceleration field, [m / s^2],

$\boldsymbol{\omega_X}$ — the vector of the angular velocity of X, [rad / s],

$\mathbf{a_{XEC}}$ — the vector of the electric centripetal acceleration of X, [m / s^2].

On the basis of a vectorial analysis of the uniform circular motion of the electric charges, as well as of (11) – (13):

$$(q_X > 0) \Rightarrow (\mathbf{F_{FC}} = q_X \boldsymbol{\omega_X} \times \mathbf{v_X} = q_X \mathbf{a_{XEC}} = q_X \mathbf{dv_{XC}} / \mathbf{dt} = \mathbf{dp_{XEC}} / \mathbf{dt}) \quad (14),$$

$$(q_X < 0) \Rightarrow (\mathbf{F_{FC}} = -q_X \boldsymbol{\omega_X} \times \mathbf{v_X} = -q_X \mathbf{a_{XEC}} = -q_X \mathbf{dv_{XC}} / \mathbf{dt} = -\mathbf{dp_{XEC}} / \mathbf{dt}) \quad (15),$$

in which: $\mathbf{F_{FC}}$ — the vector of the centripetal Franklin force exerted on X, [Fn],

$\mathbf{dv_{XC}}$ — the vector of the centripetal variation of the velocity of X, [m / s],

$\mathbf{dp_{XEC}}$ — the vector of the centripetal variation of the electric impulse of X, [C m / s].

Or:

$$(q_X > 0) \Rightarrow (F_{FC} = q_X \omega_X^2 r = q_X v_X^2 / r = q_X dv_{XC} / dt = dp_{XEC} / dt) \quad (16),$$

$$(q_X < 0) \Rightarrow (F_{FC} = -q_X \omega_X^2 r = -q_X v_X^2 / r = -q_X dv_{XC} / dt = -dp_{XEC} / dt) \quad (17).$$

1.6) <u>The electric field as tangential acceleration field</u>

If X is found on a circular trajectory with the radius r, which encircles a magnetic field variable in its measure in time, the expression of the intensity of the electric circular field acting on X results

from the electromagnetic-induction law of Faraday:

$$E = -(1 / 2 \pi r)\, d\Phi_B / dt \qquad (18).$$

The natural units of measure of the magnetic flux inside the circle with the radius r, Φ_{BF}, as well as of the tangential acceleration intensity of the electric circular field, E_{FT} result from (3) and (18):

$$([F_F] = [Fn]) \Rightarrow ([\Phi_{BF}] = [m^2 / s]) \Rightarrow ([E_{FT}] = [m / s^2]) \qquad (19).$$

1.7) <u>Law of the accelerated circular motion of the electric charges</u>

On the basis of a vectorial analysis of the behavior of the electric charges in electric circular field, as well as of (18), the following vectorial expressions can be established:

$$(q_X > 0) \Rightarrow (\mathbf{E_{FT}} = \mathbf{a_{ET}} = \mathbf{r} \times \boldsymbol{\alpha_B} = \boldsymbol{\alpha_X} \times \mathbf{r} = \mathbf{a_{XET}}) \qquad (20),$$

$$(q_X < 0) \Rightarrow (\mathbf{E_{FT}} = \mathbf{a_{ET}} = -\mathbf{r} \times \boldsymbol{\alpha_B} = -\boldsymbol{\alpha_X} \times \mathbf{r} = -\mathbf{a_{XET}}) \qquad (21),$$

in which: $\mathbf{a_{ET}}$ — the vector of the intensity of the electric circular field as electric tangential acceleration field,

[m / s^2],

$\boldsymbol{\alpha_B}$ — the vector of the angular acceleration of the magnetic induction, [rad / s^2],

$\boldsymbol{\alpha_X}$ — the vector of the angular acceleration of X, [rad / s^2],

$\mathbf{a_{XET}}$ — the vector of the electric tangential acceleration of X, [m / s^2].

On the basis of a vectorial analysis of the accelerated circular motion of the electric charges, as well as of (4), (20) and (21):

$$(q_X > 0) \Rightarrow (\mathbf{F_{FT}} = q_X\, \boldsymbol{\alpha_X} \times \mathbf{r} = q_X\, \mathbf{a_{XET}} = q_X\, \mathbf{dv_{XT}} / \mathbf{dt} = \mathbf{dp_{XET}} / \mathbf{dt}) \qquad (22),$$

$$(q_X < 0) \Rightarrow (\mathbf{F_{FT}} = -q_X\, \boldsymbol{\alpha_X} \times \mathbf{r} = -q_X\, \mathbf{a_{XET}} = -q_X\, \mathbf{dv_{XT}} / \mathbf{dt} = -\mathbf{dp_{XET}} / \mathbf{dt}) \qquad (23),$$

in which: $\mathbf{F_{FT}}$ — the vector of the tangential Franklin force exerted on X, [Fn],

$\mathbf{dv_{XC}}$ — the vector of the tangential variation of the velocity of X, [m / s],

$\mathbf{dp_{XET}}$ — the vector of the tangential variation of the electric impulse of X, [C m / s].

1.8) Classical inductive general law of motion

On the basis of (1), (2), (8), (9), (14) – (17), (22) and (23):

$$(q_X > 0) \Rightarrow (F = q_X a_X = q_X dv_X / dt = dp_X / dt) \quad (24),$$

$$(q_X < 0) \Rightarrow (F = - q_X a_X = - q_X dv_X / dt = - dp_X / dt) \quad (25),$$

in which: F — the force exerted on X, [U m / s^2],

q_X — the charge of X, [U],

a_X — the acceleration of X, [m / s^2],

p_X — the impulse of X, [U m / s].

2) Consequences

2.1) Hypothetical principle of the symmetry of charges, fields, motions, motional directions and motion laws

(a) Each physical system can be brought down to types of charge; each type of charge is of dichotomic character, which can be mathematically expressed with the signs plus and minus;

(b) the forms of charge with different signs of the same type of charge bring into existence different fields;

(c) each form of physical motion can be brought down to rectilinear and circular motions; each type of charge can effect both rectilinear and circular motions; each type of charge is source of specific fields capable of bringing about the rectilinear, centripetal, and, respectively, tangential accelerations of its own forms of charge;

(d) both the rectilinear and circular motions can proceed in two opposite directions;

(e) to each form of charge of the same type of charge, a motion law corresponds, having the same sign with the sign of the respective form of charge.

2.2) <u>The mass as hypothetical gravitational charge</u>

According to the principle (a), as well as to (24) and (25), the mass can be considered gravitational charge, of which positive form is the mass of matter, the negative form the mass of anti-matter.

On the basis of the principles (b) and (c), as the fields capable of bringing about the rectilinear acceleration of the electric charges are the electrostatic fields, in that manner the positive and negative masses, namely the positive and negative gravitational charges are sources of the gravitational fields capable of bringing about their rectilinear acceleration.

Conforming to the principle (d), for both the approach and removal of the masses, namely gravitational charges, two motions with opposite directions are necessary.

According to the principle (b) and (e), as well as to (24) and (25), the gravitational fields exert opposite actions to matter and anti-matter masses, namely positive and negative gravitational charges.

2.3) <u>Gravitational impulse and hypothetical law of the rectilinear motion of the gravitational charges</u>

If X is surrounded by a gravitational field of external origin, the expression of the Newton force exerted on it:

$$F_N = m_X\, g = q_{XG}\, g \qquad (26),$$

in which: F_N — the Newton force exerted on X, [N],

q_{XG} — the gravitational charge of X, [kg].

On the basis of a vectorial analysis of the behavior of the matter mass as positive gravitational charge in gravitational field, as well as of the hypotheses relative to the anti-matter mass as negative gravitational charge, the following vectorial expressions can be written:

$$(q_X > 0) \;\Rightarrow\; (\mathbf{g} = \mathbf{a_{GR}} = \mathbf{a_{XGR}}) \qquad (27),$$

$$(q_X < 0) \;\Rightarrow\; (\mathbf{g} = \mathbf{a_{GR}} = -\mathbf{a_{XGR}}) \qquad (28),$$

in which: $\mathbf{a_{GR}}$ — the vector of the intensity of the gravitational field

as gravitational rectilinear field, [m / s^2],

$\mathbf{a_{XGR}}$ — the vector of the gravitational rectilinear acceleration of X, [m / s^2].

On the basis of the point (2.2), the impulse of the mass may be termed *gravitational impulse* and its expression may be written as follows:

$$p_{XG} = m_X v_X = q_{XG} v_X \qquad (29),$$

in which: p_{XG} — the gravitational impulse of X, [kg m / s].

On the basis of a vectorial analysis of the rectilinear motion of the gravitational charges, as well as of (24) – (27):

$$(q_X > 0) \Rightarrow (F_{NR} = q_{XG} a_{XGR} = q_{XG} dv_{XR} / dt = dp_{XGR} / dt) \qquad (30),$$

$$(q_X < 0) \Rightarrow (F_{NR} = - q_{XG} a_{XGR} = - q_{XG} dv_{XR} / dt = - dp_{XGR} / dt) \qquad (31),$$

in which: F_{NR} — the rectilinear Newton force exerted on X, [N],

dp_{XGR} — the rectilinear variation of the gravitational impulse of X, [kg m / s].

2.4) <u>Hypothetical circular motions of the gravitational charges</u>

According to the principle (c), the circular motion cannot be excluded from the order of the interactions of masses, the gravitational charges must be sources of the gravitational circular fields capable of bringing about the centripetal, and, respectively, tangential accelerations of those charges. On the basis of the similarity between the electrostatic and gravitational — gravitostatic — fields, it is presumable that the gravitational circular fields resemble the electromagnetic circular fields.

Accordingly, it is presumable that — similarly to the laws of Ampère and Maxwell, as well as of Biot and Savart — the moving gravitational charges or the gravitational rectilinear or tangential fields, variable in their measures in time, bring about gravitational centripetal fields, which are capable

of bringing in uniform circular motion other gravitational charges being in motion with gravitational centripetal forces. Further, it is presumable that — similarly to the electromagnetic-induction law of Faraday — the gravitational centripetal fields variable in their measures in time, bring about gravitational tangential fields, which are capable of bringing in accelerated circular motion other gravitational charges with gravitational tangential forces.

2.5) <u>Classification of the interaction fields</u>

Depending on the type of their accelerating effects, it may be distinguished rectilinear, centripetal and tangential fields. Accordingly, as regards the interactions of the electric charges, the electrostatic field may be termed *electric rectilinear field*, the magnetic field *electric centripetal field* and the electric circular field *electric tangential field*.

2.6) <u>The ratio of the Franklin and Newton forces</u>

The acceleration of electric charges also means the acceleration of gravitational charges. In the case of the force F exerted on the particle X, the acceleration of the electric charge q_{XE} can be considered quantitatively identical with the acceleration of the gravitational charge q_{XG}.

The ratios of the electric and gravitational charges of the particles are variable. For this reason, the ratios of the Franklin and Newton forces exerted on X vary regularly from a particle to another:

$$(q_{XE} > 0 \quad \text{and} \quad q_{XG} > 0) \quad \Rightarrow \quad (q_{XE} / q_{XG} = q_{XE}\, a_X / q_{XG}\, a_X = F_F / F_N) \qquad (32).$$

2.7) <u>The electrokinetic energy</u>

The forces bringing about the rectilinear or tangential accelerations of the electric charges effect work-function on the electric charges as well. On the basis of (8):

$$W_{E+} = \int F_F\, dx = \int q_{XE}\, a_{XE}\, dx = q_{XE} \int (dv_X / dt)\, dx = q_{XE} \int (dv_X / dx)\, (dx / dt)\, dx =$$

$$= q_{XE} \int v_X\, dv_X = q_{XE}\, (v_X^2 - v_{X0}^2) / 2 \qquad (33),$$

in which: W_{E+} — the electric work-function effected by F_F on a positive electric charge, [Fn m].

On the basis of (9), similarly:

$$W_{E-} = \int F_F \, dx = \int (- q_{XE} \, a_{XE}) \, dx = - q_{XE} \, (v_X^2 - v_{X0}^2) / 2 \qquad (34).$$

On the basis of (33) and (34), the electrokinetic energies of the positive, and, respectively, negative electric charges may be defined as follows:

$$T_{E+} = q_{XE} \, v_X^2 / 2 \qquad (35) \qquad \text{and} \qquad T_{E-} = - q_{XE} \, v_X^2 / 2 \qquad (36),$$

in which: T_{E+} and T_{E-} — the electrokinetic energies of the positive,

and, respectively, negative electric charges, [Fn m].

2.8) <u>The moment of the tangential Franklin force, the electric momentum and the law of the accelerated circular motion of the electric charges</u>

In the case of the accelerated circular motion of X, the moment of the tangential Franklin force exerted on X can be defined:

$$\mathbf{M_F} = \mathbf{r} \times \mathbf{F_{FT}} \qquad (37),$$

in which: $\mathbf{M_F}$ — the vector of the moment of the tangential Franklin force exerted on X, [Fn m].

Further, the electric momentum can be defined:

$$\mathbf{l_{XF}} = \mathbf{r} \times \mathbf{p_{XE}} = \mathbf{r} \times q_{XE} \, \mathbf{v_X} = q_{XE} \, r^2 \, \boldsymbol{\omega}_\mathbf{X} = I_{XF} \, \boldsymbol{\omega}_\mathbf{X} \qquad (38),$$

in which: $\mathbf{l_{XF}}$ — the vector of the electric momentum of X, [C m^2 / s],

I_{XF} — the electric inertia of X, [C m^2].

On the basis of (22), (23), (37) and (38), the law of the accelerated circular motion of the electric charges:

$$(q_{XE} > 0) \quad \Rightarrow \quad (\mathbf{M_F} = I_{XF} \, \boldsymbol{\alpha}_\mathbf{X} = I_{XF} \, \mathbf{d}\boldsymbol{\omega}_\mathbf{X} / \mathbf{dt} = \mathbf{dl_{XF}} / \mathbf{dt}) \qquad (39),$$

$$(q_{XE} < 0) \quad \Rightarrow \quad (\mathbf{M_F} = - I_{XF} \, \boldsymbol{\alpha}_\mathbf{X} = - I_{XF} \, \mathbf{d}\boldsymbol{\omega}_\mathbf{X} / \mathbf{dt} = - \mathbf{dl_{XF}} / \mathbf{dt}) \qquad (40).$$

2.2.4. Electron model

2.2.4.1. The electronic manuscript of the article of the first stage

ELECTRON MODEL, METHOD AND FORMULA FOR CALCULATING THE RADII OF THE PHOTONS

According to the corpuscular theory of Newton, then to the photon theory of Einstein, the light consists of particles. Those constitute the quanta of the electric field. The smallest electric-field source is the electron, which is expectable to be in the closest connection with the photons.

Be a spherical electron. According to the law of Gauss:

$$\Phi_e = e / \varepsilon_0 \qquad (1),$$

in which: Φ_e — the flux of the electric field of the electron, [N m^2 / C],

e — the electric charge of the electron, [C],

ε_0 — the electric permitivity constant, [C^2 / N m^2].

The electron is formed of a material kernel and an energy shell. The mass of the kernel and the energy of the shell continually change into each other. These two opposing processes are balanced. The energy shell consists of radially fluctuating photons. In a given condition the electron fluctuates only with photons having a given frequency and wave-length, respectively. Considered to be spherical, the photons developing from the electron kernel at the velocity of the light occupy half of the sphere surfaces, while the photons developing back into the electron kernel occupy the other halves of those surfaces.

$$\Phi_e = m_\gamma c \omega S_e / 2 e \qquad (2),$$

in which: m_γ — the masses of the photons, [kg],

c — the velocity of the light, [m / s],

ω — the number of the photons emerged from the electron kernel in a unit time, [1 / s],

S_e — the surface of the electron, [m^2].

Depending on the radii of the photons, the electron kernel emits and, respectively, absorbs the photons in a limited number. The more approaching the size of the electron, the smaller is the number

of the fluctuating photons that, then the measure in which they get above the surface of the electron-kernel sphere.

$$r_\gamma = n\ c / 2\ \omega \quad (3) \quad \text{and} \quad S_e = 8\ n\ r_\gamma^2 \quad (4),$$

in which: r_γ — the radii of the photons, [m],

n — the number of the photons in course of developing from the surface of the electron kernel in a given moment.

Eliminating n from (3) and (4):

$$\omega = c\ S_e / 16\ r_\gamma^3 \quad (5).$$

On the basis of (2) and (5):

$$\Phi_e = m_\gamma\ c^2\ S_e^2 / 32\ e\ r_\gamma^3 \quad (6).$$

Since:

$$m_\gamma = h\ \nu_\gamma / c^2 \quad (7) \quad \text{and} \quad S_e = 4\ \pi\ R_e^2 \quad (8)$$

— in which: h — the constant of Planck, [J s],

ν_γ — the frequencies of the photons, [Hz],

R_e — the radius of the electron , [m] —

on the basis of (1), (6), (7) and (8):

$$r_\gamma = [\pi^2\ \varepsilon_0\ h\ R_e^4\ \nu_\gamma / 2\ e^2]^{1/3} \quad (9).$$

It is known that the frequencies — therefore also the masses — of the photons coming into being from the electron-positron “annihilation” are equal to the frequency and, respectively, the mass of the electron. On the basis of this it can be supposed that those photons are equal to the electron in their radii as well:

$$\nu_\gamma = \nu_e = m_e\ c^2 / h \quad \Rightarrow \quad r_\gamma = R_e \quad (10),$$

in which: ν_e — the Compton frequency of the electron, [Hz],

m_e — the mass of the electron, [kg].

On the basis of (9) and (10):

$$R_e = 2\ e^2 / \pi^2\ \varepsilon_0\ m_e\ c^2 = 7.16 \cdot 10^{-15}\ \text{m} \quad (11),$$

On the basis of (9) and (11):

$$r_\gamma = R_e\ [\nu_\gamma / \nu_e]^{1/3} = s\ \nu_\gamma^{1/3} \quad (12),$$

$$s = R_e / \nu_e^{1/3} = 1.43 \cdot 10^{-21}\ \text{m s}^{1/3} \quad (13),$$

in which: s — the photon-radius constant, [m $s^{1/3}$].

Examples

The table below presents the radii of a number of photon types:

$$r_\gamma = R_e \, [\nu_\gamma / \nu_e]^{1/3} = s \, \nu_\gamma^{1/3} \quad (12),$$

$$s = R_e / \nu_e^{1/3} = 1.43 \cdot 10^{-21} \ \text{m s}^{1/3} \quad (13),$$

in which: S — the photon-radius constant, [m $s^{1/3}$].

Examples

The table below presents the radii of a number of photon types:

NUMBER	PHOTON TYPE	PHOTON FREQUENCY, [Hz]	PHOTON RADIUS, [m]
1	Radio	10^3 10^6	$1.43 \cdot 10^{-20}$ $1.43 \cdot 10^{-19}$
2	Micro	10^{10}	$3.07 \cdot 10^{-18}$
3	Infra-red	10^{13}	$3.07 \cdot 10^{-17}$
4	Visible	10^{15}	$1.43 \cdot 10^{-16}$
5	Ultra-violet	10^{16}	$3.07 \cdot 10^{-16}$
6	Röntgen	10^{18}	$1.43 \cdot 10^{-15}$
7	Electron Frequency Photon	$1.23 \cdot 10^{20}$	$7.16 \cdot 10^{-15}$
8	Gamma	10^{21}	$1.43 \cdot 10^{-14}$

The interpretation of the results

On the basis of the above values it can be ascertained that:

The interpretation of the results

On the basis of the above values it can be ascertained that:

1) as the expression of R_e is structurally equal to the expression of the “classical” radius of the electron and as the value of R_e comes close to the value of that, the photon-radius values can be considered to be relatively exact;

2) regularly the radii of the photons are much smaller than the radius of the electron;

3) the photons of electron frequency, namely of electron radius can be found in the upper boundary band of the known frequency scale;

4) the grading of the “elementary” particles conforming to dimension does not change the location of the photons as compared with the grading conforming to the rest mass;

5) on the basis of the statements (3) and (4) it is presumable that photons with radii considerably larger than the radius of the electron do not exist, the band of the γ-photons — for the transitional zone of the photons and the leptons — constitutes the edge of the photon scale; this supposition is supported by the formula (12) as well, according to which for doubling the radius an eightfold increase of the frequency is necessary.

2.2.4.2. The electronic manuscript of the article of the second stage

ELECTRON MODEL, METHOD AND FORMULA FOR CALCULATING THE RADII OF PHOTONS

According to the corpuscular theory of Newton and the photon theory of Einstein, the light consists of particles. These constitute the quanta of the electric field. The smallest electric-field source is the electron, which as such is expectable to be in the closest connection with photons.

Be a spherical electron. According to the law of Gauss:

$$\mathbf{\Phi_e = e \ / \ \varepsilon_0} \qquad (1),$$

in which: Φ_e - the flux of the electric field of the electron, $[N\ m^2 / C]$,

e - the electric charge of the electron, [C],

ε_0 - the electric permitivity constant, $[C^2 / N\ m^2]$.

The electron may be considered as being a sphere of specific matter surrounded by an energy shell. The mass of the matter and the energy of the shell continually change into each other. These two opposing processes are balanced. The energy shell consists of radially fluctuating spherical photons. In a given condition the electron fluctuates only with photons having a given frequency.

Considering the dimensional formula of the electric flux of the electron in the following manner:

$$\mathbf{[\Phi_e] = [N\ m^2 / C] = [m^2]\ [m / s]\ [kg]\ [1 / s] / [C]} \qquad (2),$$

and assimilating the electric flux of the electron with its flux of fluctuating photons, on the basis of (2) the following theoretical formula may be established:

$$\Phi_e = S_e \; c \; m_\gamma \; \omega / e \qquad (3)$$

in which: S_e - the surface of the electron, [m^2],

c - the velocity of light, [m / s),

m_γ - the mass of photon, [kg],

ω - the number of photons emerged from the electron in a unit time, [1 / s].

Depending on the radius of photons, the electron emits and, respectively, absorbs the photons in a certain number. The larger the radius of photons is, the smaller the number of emitted and absorbed photons is. Supposing that the photons touch one another on the surface and out of the electron, the following formulas may be established;

$$n = S_e / 4 \; r_\gamma^2 \qquad (4) \qquad \text{and} \qquad \omega = n \; c / 2 \; r_\gamma \qquad (5),$$

in which: n - the number of photons emerging from the electron in a given moment,

r_γ - the radii of photons, [m].

Eliminating n from (4) and (5):

$$\omega = S_e \; c / 8 \; r_\gamma^3 \qquad (6).$$

On the basis of (5) and (6):

$$\Phi_e = S_e^2 \; c^2 \; m_\gamma / 8 \; e \; r_\gamma^3 \qquad (7).$$

Since:

$$m_\gamma = h \; \nu_\gamma / c^2 \qquad (8) \qquad \text{and} \qquad S_e = 4 \; \pi \; R_e^2 \qquad (9),$$

in which: h - the constant of Planck, [J s],

ν_γ - the frequency of photons, [Hz],

R_e - the radius of the electron, [m],

on the basis of (1), (7), (8) and (9):

$$\mathbf{r_\gamma = [2\ \pi^2\ \varepsilon_0\ h\ R_e^4\ \nu_\gamma / e^2]^{1/3}} \qquad (10).$$

It is known that the frequency, therefore also the mass, of the photons coming into being from the electron-positron “annihilation” is equal to the frequency and, respectively, the mass of the electron. On the basis of this it can be supposed that those photons are identical with the electron in their radii as well:

$$\mathbf{\nu_\gamma = \nu_e = m_e\ c^2 / h \quad <=> \quad r_\gamma = R_e} \qquad (11),$$

in which: ν_e - the Compton frequency of the electron, [Hz],

m_e - the rest mass of the electron, [kg].

On the basis of (10) and (11):

$$\mathbf{R_e = e^2 / 2\ \pi^2\ \varepsilon_0\ m_e\ c^2 = 1.8\ 10^{-15}}\ \text{m} \qquad (12).$$

On the basis of (10) and (12):

$$\mathbf{r_\gamma = R_e\ [\nu_\gamma / \nu_e]^{1/3} = s\ \nu_\gamma^{1/3}} \qquad (13),$$

$$\mathbf{s = R_e / \nu_e^{1/3} = 3.6\ 10^{-22}}\ \text{m s}^{1/3} \qquad (14),$$

in which: s - the photon-radius constant, [m $s^{1/3}$].

Examples

The table below presents the radii of a number of photon types:

[See the photo of the table on paper above.]

Interpretation of results

On the basis of the above values it can be ascertained that:

1) as the expression (2) of R_e is structurally identical with the expression of the “classical” radius of the electron and as the value (12) of R_e comes close to the value of that, the photon radius values can be considered to be relatively exact;

2) regularly the radii of photons are much smaller than the radius of the electron;

3) the photon of electron frequency, namely of electron radius, can be found in the upper boundary band of the known frequency scale;

4) the ranking of the “elementary” particles conforming to dimension does not change the location of photons as compared with the ranking conforming to the mass;

5) on the basis of the statements (3) and (4) it is presumable that photons with radii considerably larger than the radius of the electron do not exist, the band of the gamma photons - for the transitional zone of photons and leptons - constitutes the edge of the photon scale; this supposition is supported by the formula (13) as well, according to which for doubling the radius an eightfold increase of the frequency is necessary.

Suggestion

With a computer-assisted modeling considering all relevant data, facts and laws, the model could lead to a more accurate visualization and a more profound understanding of the electron, photons and phenomena related to them.

2.2.4.3. The electronic manuscript of the article of the third stage

Electron model and method yielding formulas of properties of photons and gravitons

Abstract

The paper proposes a spherical electron model radially fluctuating with photons and gravitons, and a method leading to a self-corroboration of the model by essentially reproducing the formula and value of the “classical” radius of the electron, to formulas of the radii, theoretical upper limits of the radii and frequencies, energy densities of photons and gravitons, and ranges of the fields of the electron. As regards dimension, the model locates photons and gravitons parallel directly after leptons. As regards frequency, photons are directly followed by gravitons. The model and method applied to photons also yields the concept of frequency of the smallest photon, establishing extremely low values for the frequencies of gravitons, which seems to be in keeping with experience.

Subject Classification Number: PACS 12.60 -i and 14.70 -e

The “elementary” particles resemble a string as regards their oscillations, but they are not strings, they are not one-dimensional. “They are drums, rather than strings”, this is one of the main massages of the spherical electron model below, applicable to photons as well, corroborating itself by essentially reproducing the formula and value of the “classical” radius of the electron. As such, it could inspire current efforts for devising an overall theory of particles and their interactions.

The most common though, gravitation is still the least known and understood fundamental physical interaction. It is presumed that gravitons exist, they are subjects of theories, but still missing from the experience. Learning their dimensional and oscillatory properties, as resulted from applying the electron model to photons, could make experimentalists find out the type of technique necessary for their detection.

1) Electron model and method yielding formulas of properties of photons

According to the corpuscular theory of Newton and the photon theory of Einstein, the light consists of particles. Those constitute the quanta of the electric field. The smallest electric-field source is the electron, which as such is expected to be in the closest connection with photons.

1.1) Formula of the radii of photons

Be an electron as a sphere of specific matter. According to the law of Gauss:

$$\mathbf{\Phi_{eE} = e / \varepsilon_0} \qquad (1),$$

in which: Φ_{eE} — the flux of the electric field of the electron, [N m^2 / C],

e — the electric charge of the electron, [C],

ε_0 — the electric permittivity constant, [C^2 / N m^2].

The electron is surrounded by its electric field, namely shell of electric energy. The charge of the matter and the energy of the shell continually transform into each other. These two opposing

processes are balanced. The energy shell consists of radially fluctuating spherical photons. In a given condition the electron fluctuates only with photons having a given frequency.

Considering the dimensional formula of the electric flux of the electron in the following manner:

$$[\Phi_{eE}] = N\ m^2 / C = m^2\ (m / s)\ kg\ (1 / s) / C \qquad (2),$$

and assimilating the flux of the electric field of the electron with the flux of fluctuating photons, on the basis of (2) the following theoretical formula may be established:

$$\Phi_{eE} = S_e\ c\ m_\gamma\ \omega_\gamma / e \qquad (3),$$

in which: S_e — the surface of the electron, [m^2],

c — the velocity of photons, [m / s],

m_γ — the mass of photons, [kg],

ω_γ — the number of photons emerged from the electron in a unit time, [1 / s].

Depending on the radius of photons, in a moment the electron emits and, respectively, absorbs the photons in a certain number. The larger the radius of photons, the smaller the number of emitted and absorbed photons is. Supposing that the photons touch one another on the surface and out of the electron, the following formulas can be established:

$$n_\gamma = S_e / 4\ r_\gamma^2 \qquad (4) \qquad \text{and} \qquad \omega_\gamma = n_\gamma\ c / 2\ r_\gamma \qquad (5),$$

in which: n_γ — the number of photons emerging from the electron in a given moment,

r_γ — the radius of photons, [m].

Eliminating n_γ from (4) and (5):

$$\omega_{\gamma e} = S_e\ c / 8\ r_\gamma^3 \qquad (6).$$

Since it is known that:

$$\mathbf{m_\gamma = h\,\nu_\gamma / c^2} \quad (7) \quad \text{and} \quad \mathbf{S_e = 4\,\pi\,R_e^2} \quad (8),$$

in which: h — the constant of Planck, [J s],

ν_γ — the frequency of the photon, [Hz],

R_e — the radius of the electron , [m],

on the basis of (3), (1), (7) and (8):

$$\mathbf{r_\gamma = (2\,\pi^2\,\varepsilon_0\,h\,R_e^4\,\nu_\gamma / e^2)^{1/3}} \quad (9).$$

According to experience, the frequency — therefore also the mass — of the photons coming into being from the electron-positron “annihilation” is equal to the frequency and, respectively, the mass of the electron. On the basis of this it can be supposed that those photons are identical with the electron in their radius as well:

$$\mathbf{\nu_\gamma = \nu_e = m_e\,c^2 / h} \quad \Rightarrow \quad \mathbf{r_\gamma = R_e} \quad (10),$$

in which: ν_e — the Compton frequency of the electron, [Hz],

m_e — the mass of the electron, [kg].

On the basis of (9) and (10):

$$\mathbf{R_e = e^2 / 2\,\pi^2\,\varepsilon_0\,m_e\,c^2 = (2 / \pi)\,R_{ce} = 1.8\,10^{-15}}\ \text{m} \quad (11),$$

in which: R_{ce} — the “classical” radius of the electron, [m].

On the basis of (9)-(11):

$$\mathbf{r_\gamma = (h\,R_e^3 / m_e\,c^2)^{1/3}\,\nu_\gamma^{1/3} = R_e\,(\nu_\gamma / \nu_e)^{1/3} = s_\gamma\,\nu_\gamma^{1/3}} \quad (12),$$

$$\mathbf{s_\gamma = (h\,R_e^3 / m_e\,c^2)^{1/3} = 3.6\,10^{-22}}\ \text{m s}^{1/3} \quad (13),$$

in which: s_γ — the photon-radius constant, [m $s^{1/3}$].

The table below presents the radii of a number of photon types:

[See the photo of the table on paper above.]

1.2) Theoretical upper limits of the radii and frequencies of photons

From (4) and (8) it results that:

$$\mathbf{r_\gamma = R_e\,(\pi / n_\gamma)^{1/2}} \qquad (14).$$

On the basis of (14) and (12):

$$\mathbf{\nu_\gamma = \nu_e\,(\pi / n_\gamma)^{3/2}} \qquad (15).$$

Supposing that the electron can least fluctuate with one photon, it can be seen that the values of the radius and frequency of photons reach their theoretical maximums under the following condition:

$$\mathbf{n_\gamma = 1 \Rightarrow r_\gamma = r_{\gamma M} = \pi^{1/2}\,R_e = 3.2\ 10^{-15}\ m \Rightarrow \nu_\gamma = \nu_{\gamma M} = \pi^{3/2}\,R_e = 7.0\ 10^{20}}\ \text{Hz} \qquad (16),$$

in which: $r_{\gamma M}$ — the theoretical maximum radius of photons, [m],

$\nu_{\gamma M}$ — the theoretical maximum frequency of photons, [Hz].

1.3) Value of the energy density of photons

It can be written that:

$$\mathbf{V_\gamma = 4\,\pi\,r_\gamma^3 / 3} \qquad (17) \qquad \text{and} \qquad \mathbf{E_\gamma = h\,\nu_\gamma} \qquad (18),$$

in which: V_γ — the volume of the photon, [m^3],

E_γ — the energy of the photon, [J].

On the basis of (12), (17) and (18):

$$\mathbf{\rho_\gamma = E_\gamma / V_\gamma = 3\,m_e\,c^2 / 4\,\pi\,R_e^3 = 3.5\ 10^{30}}\ \text{J / m}^3 \qquad (19),$$

in which: ρ_γ — the energy density of photons, [J / m^3].

1.4) Range of the electric field of the electron

It can be written that:

$$\mathbf{a_\gamma = U_{eE} / h\,\nu_\gamma = n_\gamma\,R_{eE} / r_\gamma} \qquad (20),$$

in which: a_γ — the number of photons with which the electron fluctuates,

U_{eE} — the total energy of the electric field of the electron, [J],

R_{eE} — the range of the electric field of the electron, [m].

It is known that:

$$\mathbf{U_{eE} = e^2 / \pi^3 \varepsilon_0 R_{ce}} \quad (21) \quad \text{and} \quad \mathbf{R_{ce} = e^2 / 4 \pi \varepsilon_0 m_e c^2} \quad (22).$$

On the basis of (20)-(22), (12), (4), (10) and (8):

$$\mathbf{R_{eE} = (4 / \pi^3) R_e = 2.3\ 10^{-16}}\ \text{m} \quad (23)$$

1.5) Interpretation of results

a) by essentially reproducing the formula and value of the "classical" radius of the electron, the model and method prove to be consistent with the present knowledge, they not only assert, but also self-corroborate the three-dimensionality of the electron and photons and as such should yield relatively exact values for the radii of photons;

b) the model and method refute the concept of point-like particle of the Standard Model and the bi-dimensional model of string theories and demonstrate that they are not consistent with the present knowledge;

c) the ranking of the "elementary" particles conforming to dimension does not change the location of photons as compared with the ranking conforming to rest mass;

d) on the basis of the value (16) of the theoretical upper limit of the radii of photons it is presumable that photons with radii considerably larger than the radius of the electron do not exist, the band of the γ-photons — for the transitional zone of the photons and the leptons — constitutes the edge of the photon scale; this supposition is also supported by the formula (12), according to which for doubling the radius an eightfold increase of frequency is necessary;

e) the formulas (14) and (15) appear to lay the theoretical foundations of that there are photons with radii and frequencies larger than the radius and, respectively, the Compton frequency of the electron;

f) the formulas (14) and (15) might suggest that the radii and, respectively, the frequencies and

wavelengths of photons would be quantized;

g) the formula (23) is in keeping with the evident fact that with the finite value of its total energy the electric field of the electron cannot have an infinite range; however, its relatively low value is a manifestation of the deficiency of the model.

2) Formulas of properties of gravitons

2.1) Formula of the radii of gravitons

Taking into consideration that the electron is the particle with the smallest rest mass, the above model and method can also be applied to the electron as a source of gravitational field, provided the validity of the pertinent formulas of Planck and Einstein can be extended to gravitons. On the basis of the gravitational variant of the law of Gauss it can be written:

$$\mathbf{\Phi_{eG} = 4\,\pi\,G\,m_e} \qquad (24),$$

in which: Φ_{eG} — the flux of the gravitational field of the electron, [N m^2 / kg],

G — the constant of Newton, [N m^2 / kg^2].

Through its rest mass the electron fluctuates with gravitons as well, whose flux can be expressed on the resemblance of (2) with the following formula:

$$\mathbf{\Phi_{eG} = S_e\,c_G\,m_G\,\omega_G / m_e} \qquad (25),$$

in which: c_G — the velocity of gravitons, [m / s],

m_G — the mass of gravitons, [kg],

ω_G — the number of gravitons emerged from the electron in a unit time, [1 / s].

It can also be written:

$$\mathbf{n_G = S_e / 4\,r_G^2} \qquad (26), \qquad \mathbf{\omega_G = n_G\,c_G\ / 2\ r_G} \qquad (27), \qquad \mathbf{m_G = h\,\nu_G / c_G^2} \qquad (28),$$

in which: n_G — the number of gravitons emerging from the electron in a given moment,

r_G — the radius of gravitons, [m].

ν_G — the frequency of gravitons, [Hz].

On the basis of (24)-(28) and (8):

$$\mathbf{r_G = (\pi\, h\, R_e^4 / 2\, G\, m_e^2)^{1/3}\, \nu_G^{1/3} = s_G\, \nu_G^{1/3}} \quad (29),$$

$$\mathbf{s_G = (\pi\, h\, R_e^4 / 2\, G\, m_e^2)^{1/3} = 5.8\ 10^{-8}}\ \text{m s}^{1/3} \quad (30),$$

in which: s_G — the graviton-radius constant, [m $s^{1/3}$].

2.2) Formula of the radii of gravitons yielded by the electron model applied to photons

The curvature of trajectories of photons can be interpreted as an effect of the gravitational interaction between photons and the near celestial bodies. Consequently, photons can be considered sources of gravitons. Applying the electron model to photons, on the basis of the same order of ideas it can be written:

$$\mathbf{\Phi_{\gamma G} = 4\, \pi\, G\, m_\gamma} \quad (31),$$

in which: $\Phi_{\gamma G}$ — the flux of the gravitational field of the photon, [N m^2 / kg],

$$\mathbf{\Phi_{\gamma G} = S_\gamma\, c_G\, m_G\, \omega_{G\gamma} / m_\gamma} \quad (32),$$

in which: S_γ — the surface of the photon, [m^2],

$\omega_{G\gamma}$ — the number of gravitons emerged from the photon in a unit time, [1 / s].

$$\mathbf{n_{G\gamma} = S_\gamma / 4\, r_G^2} \quad (33) \quad \text{and} \quad \mathbf{\omega_{G\gamma} = n_{G\gamma}\, c_G / 2\, r_G} \quad (34),$$

in which: $n_{G\gamma}$ — the number of gravitons emerging from the photon in a given moment.

On the basis of (31)-(34), as well as (28) and (7):

$$\mathbf{r_G = (\pi\, c^4\, r_\gamma^4 / 2\, G\, h\, \nu_\gamma^2)^{1/3}\, \nu_G^{1/3}} \quad (35).$$

The radius and frequency of the photon as variables can only be eliminated from the

formula(35) in a way consistent with the formula (12) if:

$$\mathbf{r_\gamma = R_e} \quad (36) \quad \text{and} \quad \mathbf{\nu_\gamma = \nu_e} \quad (37).$$

On the basis of (36), (37) and (10) the formula (35) transforms into the formula (29), which can be considered the unique expression of the radii of gravitons.

On the basis of (35) and (29):

$$\mathbf{r_\gamma = R_e\ (\nu_\gamma / \nu_e)^{1/2}} \quad (38).$$

It can be seen that the formula (38) is also consistent with the formula (12) only under the conditions (36) and (37) and, consequently, the same formula (29) can be obtained in this way as well.

2.3) <u>The concept of minimum-frequency and -radius photon</u>

On the analogy of (12) the formula (29) can be written:

$$\mathbf{r_G = R_e\ (\pi\ h\ R_e / 2\ G\ m_e^2)^{1/3}\ \nu_G^{1/3}} \quad (39).$$

It can be ascertained that the inverse of the complex constant in parenthesis has the unit of measure of frequency. As such, it should play the same role in the formula (39) as the Compton frequency of the electron plays in the formula (12). Consequently, on the basis of the same analogy that constant can be considered as being the frequency of the photon with the smallest radius. That is:

$$\mathbf{2\ G\ m_e^2 / \pi\ h\ R_e = \nu_{\gamma m} = 2.9\ 10^{-23}}\ \text{Hz} \quad (40),$$

in which: $\nu_{\gamma m}$ — the frequency of the smallest photon, [Hz].

As a result, on the basis of (40) the formula (29) can be written in the following manner:

$$\mathbf{r_G = R_e\ (\nu_G / \nu_{\gamma m})^{1/3}} \quad (41).$$

On the basis of (40), (11), (24), (1) and (10) it can also be written:

$$\mathbf{\nu_{\gamma m} = (\Phi_{eG}\ m_e / \Phi_{eE}\ e)\ \nu_e} \quad (42).$$

From (12) it results that:

$$\mathbf{r_{\gamma m} = R_e\,(\nu_{\gamma m}\ /\ \nu_e)^{1/3} = 1.1\ 10^{-29}}\ \ \text{m} \qquad (43),$$

in which: $r_{\gamma m}$ — the radius of the smallest photon, [m].

On the basis of (41), (43) and (42):

$$\mathbf{r_G = r_{\gamma m}\,(\Phi_{eE}\ e\ /\ \Phi_{eG}\ m_e)^{1/3}\,(\nu_G\ /\ \nu_{\gamma m})^{1/3}} \qquad (44).$$

2.4) <u>Theoretical upper limits of the radii and frequencies of gravitons</u>

From (26) and (8) it results that:

$$\mathbf{r_G = R_e\,(\pi\ /\ n_G)^{1/2}} \qquad (45).$$

On the basis of (45) and (41):

$$\mathbf{\nu_G = \nu_{\gamma m}\,(\pi\ /\ n_G)^{3/2}} \qquad (46).$$

Therefore, if the minimum number of gravitons with which the electron can fluctuate is one:

$$\mathbf{n_G = 1 \Rightarrow r_G = r_{GM} = \pi^{1/2}\,R_e = 3.2\ 10^{-15}\ m \Rightarrow \nu_G = \nu_{GM} = \pi^{3/2}\,\nu_{\gamma m} = 1.8\ 10^{-23}}\ \text{Hz} \qquad (47),$$

in which: r_{GM} — the theoretical maximum radius of gravitons, [m].

ν_{GM} — the theoretical maximum frequency of gravitons, [Hz].

2.5) <u>Value of the energy density of gravitons</u>

It can be written that:

$$\mathbf{V_G = 4\ \pi\ r_G^3\ /\ 3} \qquad (48) \qquad \text{and} \qquad \mathbf{E_G = h\ \nu_G} \qquad (49),$$

in which: V_G — the volume of the graviton, [m^3],

E_G — the energy of the graviton, [J].

On the basis of (41), (48) and (49):

$$\mathbf{\rho_G = E_G\ /\ V_G = 3\ G\ m_e^2\ /\ 2\ \pi^2\ R_e^4 = 8.0\ 10^{-13}}\ \text{J / m}^3 \qquad (50),$$

in which: ρ_G — the energy density of gravitons, [J / m^3].

2.6) Range of the gravitational field of the electron

In case of gravitons it can be written:

$$\mathbf{a_G = U_{eG} / h\, \nu_G = n_G\, R_{eG} / r_G} \qquad (51),$$

in which: a_G — the number of gravitons with which the electron fluctuates,

U_{eG} — the total energy of the gravitational field of the electron, [J],

R_{eG} — the range of the gravitational field of the electron, [m].

On the analogy of (21):

$$\mathbf{U_{eG} = 4\, G\, m_e^2 / \pi^2\, R_{ce}} \qquad (52).$$

On the basis of (51), (52), (22), (26), (8) and (40):

$$\mathbf{R_{eG} = (4 / \pi^3)\, R_e = 2.3\ 10^{-16}}\ \text{m} \qquad (53).$$

2.7) Interpretation of results

a) That the exponents of the formulas (38) and (12) are not identical may be an expression of the deficiency of the electron model as a photon model;

b) the similarity of structure of the formulas (38) and (12), that they yield relatively near values for the radii of photons, as well as that the formula (29) can also be obtained by only applying the model and method to photons suggest that the electron model can roughly be applied to photons as well;

c) the formula (38) can be considered as a theoretical confirmation of that photons are sources of gravitons;

d) that both the electron model and it applied to photons yield the same formula (29) suggests its fundamental character;

e) the consistency with one another of the formulas (12), (29) and (35) and especially the structural identity of the formulas (12) and (41) suggest that the formulas (40) and (41) are consistent with the

present knowledge, the values provided for the frequency of the smallest photon and, respectively, the radii of gravitons are relatively exact;

f) it can be seen from the formula (42) that the concept of maximum-frequency and -radius photon can exclusively be derived from properties of the electron;

g) the extremely low value of the theoretical upper limit of the frequencies of gravitons suggests extremely low values for their energies and masses, which is in keeping with the experience and could be an explanation to why gravitons have not been detected so far.

Other books

Till June 2019, from the “pit” of the imperialist national state I have succeeded in sending to the surface my following writings:

1) the Hungarian-language text paperback version of my book entitled “A magyar kommunista állam vasfüggönye felé” (Towards the Iron Curtain of the Hungarian Communist State), in Romania and Hungary;

2) the Romanian-language text-image electronic version of my book entitled “Înscrisuri şi obiecte relativ la trecerile mele frauduloase ale frontierei de stat a Republicii Socialiste România” [Documents and objects relative to my fraudulent crossings of the state border of the Socialist Republic of Romania], with the Internet distributors Google Play and Internet Archive;

3) the English-language text-image electronic version of my book entitled “My Restrained Asylum Documents and Their Restraint”, with the Internet distributors Google Play and Internet Archive;

4) the English-language text-image electronic version of my book entitled “It Is Difficult to Come out of Romania with Benefit”, with the Internet distributors Google Play and Internet Archive;

5) the English-language text-image electronic version of my book entitled “A Case of Securitate Dossier Burial in Romania”, with the Internet distributors Google Play and Internet Archive;

6) the English-language text electronic version of my book entitled “Statue of Captivity”, with the Internet distributors Google Play and Internet Archive;

7) the English-language text-image electronic version of my book entitled “My Repulsed Philosophical Theory and Its Repulsion”, with the Internet distributors Google Play and Internet Archive;

8) the English-language text-image electronic version of my book entitled “Hungarian Politics-Religion Intertwining”, with the Internet distributors Google Play and Internet Archive;

9) the English-language text-image electronic version of my book entitled “The Violent Spiritual Engineering in Piteşti”, with the Internet distributors Google Play and Internet Archive;

10) the Hungarian-language text-image electronic version of my book entitled “România Szocialista Köztársaságban junior kézilabdázóként írt képeslapjaim” [My Picture Postcards Written in the Socialist Republic of Romania as a Junior Handball Player], with the Internet distributors Google Play and Internet Archive;

11) the English- and Hungarian-language text-image electronic versions of my book entitled “Uncivilized Manifestations of Muslim Persons”, with the Internet distributors Google Play and Internet Archive;

12) the English-, Hungarian-, and Romanian-language text-image electronic versions of my book entitled “Elizabeth Adam’s Progressive Humanist Non-nationalist Universal-Nation-Making Means”, with the Internet distributors Google Play and Internet Archive;

13) the English-, Hungarian-, and Romanian-language text-image electronic versions of my book entitled “Elizabeth Adam As Wild Rose Message of National Marginalization”, with the Internet distributors Google Play and Internet Archive;

14) the English-language text-image electronic version of my book entitled “Eyes Wide Open: The Illuminati Tigress-Programing, -Training and -Using Angelina Jolie”, with the Internet distributors Google Play and Internet Archive;

15) the english-, hungarian-, and romanian-language text-image electronic versions of my book entitled “National Conspirations for Stifling Elizabeth Adam As a Terrestrial Extraterrestrial Historical Personality”, with the internet distributors Google Play and Internet Archive;

16) the english-language electronic version of my book entitled “The Conceivers of the ‘Holy Scriptures’ Are Ethnical Secret Political Organizations”, with the Internet distributors Google Play and Inter-

net Archive.

Book-creation information

The author created the contents of this book for the most part between 2004 and 2007, under private-life circumstances, by examining physics from a philosophical perspective, with the purpose of furthering physical knowledge. The electronic redaction of the book was made by the author personally mainly with the following technical means: Acer AOD270, Microsoft Windows 7, LibreOffice 4, GIMP 2.

Book-publication information

In june 2019, the author discovered ethnical-national secret politically potentially unfair multinational internet re-distributions of some of his books, which is presumedly an extension in space, time and person, as well as a new manifestation of the anti-Elizabeth Adam multinational conspiration described in his book entitled “National Conspirations for Stifling Elizabeth Adam As a Terrestrial Extraterrestrial Historical Personality”. This made it necessary the modification of the copyright dispositions mentioned at the beginning of the book, and the re-publication of the book.

Author information

The photo taken around April 2006 represents the author, István ADORJÁN. He was born on 20 December 1959 in the village Mikháza [Read approximately: 'mikha:zɔ.] [In the Romanian language: Călugăreni.] in the county Maros [Read approximately: 'mɔroʃ.] [In the Romanian language: Mureș.] in

Romania, his citizenship is Romanian, his ethnicity Hungarian, his identity first of all human, at present he regards not one state his own or his country, ideologically he is atheist, politically liberal, his theory-like conviction is that the great religions and the national states are creatures and means of the national secret political organizations, with his writings his purpose is the publication and diffusion of his say of scientific, philosophic-atheist, progressive, humanist, non-nationalist and liberal spirituality, particularly the revelation, publication and diffusion of his say relative to the national-imperialist, anti-humanist, anti-progressive and anti-scientific nature and activity of the national secret political organizations, great religions and national states.

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